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ABSTRACT

The Institute of Electrical and Electronics Engineers (IEEE) validation program is designed to motivate persons practicing in electrical and electronics engineering to pursue quality technical continuing education courses offered by any responsible sponsor. The rapid acceptance of the validation program necessitated the additional development of a system to handle course attendance and participant information data. This system (1) records course registrations, attendances, credit accumulations, and participant evaluations and sponsors' course status; (2) confirms participants' acceptable performances and course attendance for non-IEEE courses; (3) monitors IEEE's technical interest evaluations of course offerings, participants' course evaluation, and participation statistics; and (4) generates mailing labels and other items such as transcripts and Course Credit Award Certificates. Included in this document are registry system procedures and related materials (sample input cards, questionnaires, award certificates, transcripts). Supporting documentation, including a system description of the IEEE Continuing Education Registry (samples of computer generated letters, enclosures and data processing plans), explanatory notes and statistical tables relating to an IEEE mail survey, and IEEE Continuing Education Registry course evaluation questionnaire results are included in each of three appendices. (Author/JN)

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IEEE VALIDATION
OF THE
CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
REGISTRY SYSTEM

* * *

PROCEDURES

FOR USE WITH A CPT 8000 WORD PROCESSOR
AND
COMMUNICATIONS PACKAGE

* * *

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

SE038247

3-01-82

FOREWARD

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS

Purpose

The basic purpose of the IEEE validation program is to [illegible] persons pr[illegible] electronics [illegible] technical continuing [illegible] offered by any responsible [illegible]

Quality

The quality of each IEEE course is assured through two levels of evaluation: peer evaluation by appropriate representation of IEEE's technical interest and course participant evaluation upon completion of each continuing education achievement. In addition, each course participant's learning accomplishment must be evaluated.

Recognition

Recognition of acceptable participant performance in an IEEE evaluated and accepted course is given by granting IEEE Continuing Education Achievement Units (CEAU's). Courses completed without an evaluation of a participant's learning accomplishment or completed with an unacceptable performance will be awarded an IEEE Certificate of Merit or the Sponsor's credit units.

The IEEE Validation program also provides additional recognition by maintaining a permanent continuing education record for each participant in the "Validation of the Continuing Education Achievement of Engineers Registry."

All program participants may request transcripts of their continuing education record.

Motivation

Many practitioners need the information available in senior college elective technical courses, but they do not receive recognition for acceptable performance unless they are seeking an advanced degree.

This program has been initiated to provide:

- IEEE recognition of acceptable participant performance in an IEEE evaluated and accepted course.
- IEEE recognition of quality courses within the scope of the Institute's technical expertise.
- An up-to-date transcript of each participant's completed continuing education courses from any responsible sponsor using any educational media.
- An aid to Career Planning.

Participation

"Plan Now
To be a part of
this program"

John F. Wilhelm, Staff Director
Educational Services

Additional Information

Write to: IEEE
"Validation of the Continuing Education
Achievement of Engineers Registry"
445 Hoes Lane
Piscataway, New Jersey 08854

(THIS IS A PHOTOCOPY OF AN INFORMATION LEAFLET)

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PREFACE

The National Science Foundation, through the Science Education Development and Research Division of the Science Education Directorate, provided a two-year Grant to the Institute of Electrical and Electronics Engineers, IEEE, to establish a model system for the Validation of the Continuing Education Achievement of Engineers. The Grant was effective 15 September 1979 with Dr. Roy H. Mattson, University of Arizona, as the Project Director.

IEEE had designed, developed and initiated the dissemination of a fully operational model system by 1 March 1980. The rapid acceptance of the model system necessitated the additional development of a cost effective input processing scheme to handle the exponential growth of course attendance and participant information data. At the end of the two-year Grant period, 15 September 1981, all input data was being processed via a CPT-8000 Word Processor and a Telecommunication link to an off-site Data Base that is being maintained on an IBM 3033 Central Processing Unit by Neshaminy Valley Information Processing located in Trevose, Pennsylvania.

The IEEE Validation & Registry System is a modification of the NSF funded Model to meet the specific requirements of the IEEE Educational Activities Board's Continuing Education Program.

Many colleagues and organizations have contributed to the development of this IEEE Validation & Registry System, in particular, John F. Wilhelm, IEEE Staff Director Educational Services, Fern E. Katronetsky, IEEE New York staff, Marion P. Branagan, Carolyn A. Yankoski, Robert G. Wlezien, IEEE Piscataway staff, Philip R. Bagley and Frank J. Zigman, Context, Inc.

J. E Casey, P.E.
Project Manager

1 March 1982

WHAT THE SYSTEM DOES

- RECORDS:
  - Course Registrations.
  - Course Attendances and Credit Accumulations.
  - Course Participant Evaluations.
  - Sponsors' Course Status.
- CONFIRMS:
  - Participant's Acceptable Performances.
  - Course Attendances for Non-IEEE Courses.
- MONITORS:
  - IEEE's Technical Interest Evaluations of Course Offerings.
  - Participant's Evaluation of Completed Courses.
  - Participation Statistics.
- GENERATES:
  - Stationery, Transmittal Letters, Authorized Signatures, Transcripts, Course Credit Award Labels, and all documents that are necessary for each input transaction.
  - Selective Mailing Labels.

DATA AVAILABLE TO PARTICIPANTS

* *

- Current Transcript of completed Continuing Education Courses.
- Certificate of Achievement and Course Credit Award Label for acceptable performance in completed IEEE peer evaluated and other accepted courses.
- Certificate of Merit for completion of an IEEE course without an evaluation of performance.
- Additional Transcripts available to the participant upon request.
- List of courses started but not completed.

* * * *

DATA AVAILABLE TO SPONSORS

* *

- Rosters of Course Registrations.
- Course Participants' Evaluations of completed course offerings.
- Listing of course offerings attended and completed by Registry participants.
- Listing of course offerings evaluated and accepted by an IEEE Technical Interest Review.
- Trends of Course Participant Evaluations.

* * * *

IEEE VALIDATION
OF THE
CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
REGISTRY SYSTEM

* * *

PROCEDURES

FOR USE WITH A CPT 8000 WORD PROCESSOR
AND
COMMUNICATIONS PACKAGE

* * *

3-01-82

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NOTES

CPT PROCESSING OF IEEE VALIDATION & REGISTRY INPUTS

Introduction

The IEEE Validation & Registry System permits the entry of all IEEE Course Registration, payment, completion, change and deletion transactions that meet the specific needs of IEEE's Educational Activities Board.

The IEEE criteria for awarding CEAU's and IEEE Certificates is assumed as the modus operandi for IEEE-EAB or any IEEE entity that will award IEEE Certificates and/or IEEE Course Credit Award Labels prepared by the IEEE Educational Services Department, New York, N.Y.

Processing IEEE Participant and/or IEEE Course Attendance Information.

The IEEE Validation & Registry System has been designed to accept CPT Data Transmission System Format inputs that meet the needs of IEEE-EAB Short, Video and Home Study Course offerings.

There are 4 types of records in the IEEE Validation & Registry System....

(1) Participant Information Records.
(2) Participant Course Attendance Records.
(3) Sponsor Records.
(4) Course Description Records.

IEEE COURSE REGISTRATION PROCEDURE

When the IEEE course participant's information is initially entered into the System any one of seven (7) transaction letters can be requested to document the unique characteristics of the IEEE course participant's registration.

THE SPECIAL REQUEST FIELD OF THE SYSTEM FORMAT IS USED TO INITIATE THE APPROPRIATE REGISTRATION TRANSACTION LETTER. IF NO TRANSACTION LETTER IS REQUIRED, ENTER 99 IN THE SPECIAL REQUEST FIELD O .

REQUEST ONLY ONE TRANSACTION LETTER EACH TIME AN IEEE COURSE PARTICIPANT'S REGISTRATION INFORMATION IS ENTERED INTO THE SYSTEM.

The seven (7) transaction letters are attached and constitute letters CE:15, CE:16, CE:17, CE:18, CE:19, CE:20, CE:21.

FOR IEEE SHORT COURSE REGISTRATIONS, ONE OF THESE TWO (2) LETTERS WOULD BE GENERATED:

CE:15 "Short Course Registration Reply - NOT PAID."
CE:16 "Short Course Registration Reply - ADVANCED PAYMENT PURCHASE ORDERS."

FOR IEEE HOME STUDY COURSE REGISTRATIONS EXCEPT TECHNICALLY WRITE!, THE LETTER GENERATED WOULD BE:

CE:17 "Home Study Course Registration Reply-ADVANCED PAYMENT/PURCHASE ORDER (EXCEPT HS9001 TECHNICALLY WRITE!)."

FOR TECHNICALLY WRITE! A SELECTION FROM THESE FOUR (4) LETTERS WOULD BE GENERATED:

CE:18 "Home Study Registration Reply-ADVANCED PAYMENT/PURCHASE ORDER for HOME STUDY HS9001 TECHNICALLY WRITE! ONLY."
CE:19 "Home Study Course HS9001 TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT (U.S. AND CANADA)."
CE:20 "Home Study Course HS9001 TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT FOR FOREIGN STUDENTS ONLY (CANADA NOT INCLUDED)."
CE:21 "Home Study Instructor Packet Transmittal Letter."

EXAMPLES COVERING METHOD OF PAYMENT FOR ALL IEEE COURSE REGISTRATIONS (SHORT COURSE, HOME STUDY, VIDEO).

Typical line insertion covering method of payment - (examples)....

Payment by check would appear as:

CK#1234 $150 10-26-81

Payment by Credit Card would appear as:

CC#2109-876-129-542 $150 10-26-81

Payment by Purchase Order would appear as:

PO#01114 $150 10-26-81

IEEE COURSE COMPLETION PROCEDURE

Having initiated the IEEE Course Registration Procedure, the IEEE Validation & Registry System now contains all pertinent IEEE course registration, participant and payment information except for the completion date, earned credit, units and evaluation.

Therefore, to implement the IEEE Course Completion Procedure and the automatic selection of the appropriate IEEE certificate and/or course credit award label, transmittal letter and transcript, the ADDITIONAL information which must be entered into the System is transaction code !cc. Be sure to include:

- Participant Number
- Sponsor Code
- Course Number
- Completion Date
- Number of Credits
- Credit Units
- Confirmation Code "i"
- Evaluation (when available)

CAUTION:

An !pi transaction code MUST be used for a course completion when the participant is NOT presently in the Data Base.

NOTE:

The confirmation Code "i" MUST BE implemented at the time of entering the course completion information to automatically initiate the appropriate IEEE course completion letters. The "i" officially confirms that the completion procedure is for an IEEE-EAB Course. NO SPECIAL LETTER REQUEST IS NECESSARY.

See attached transmittal letters CE:01, CE:02, CE:03, CE:04, CE:09.

CE:01 "IEEE Sponsored Course Initial IEEE Certificate of Achievement and Course Credit Award Label - CEAU Transaction."
CE:02 "IEEE Sponsored Course Credit Award Label - CEAU Transaction."
CE:03 "IEEE Sponsored Course An Additional Certificate of Achievement and Course Credit Award Label - CEAU Transaction."
CE:04 "IEEE Sponsored Course IEEE Certificate of Merit Transaction." (Course without CEAUs.)
CE:14 "Transcript Transaction." (Includes CE:09 Transcript.)

IEEE CRITERIA FOR AWARDING CEAU's AND IEEE CERTIFICATES

MODUS OPERANDI:

The IEEE Validation & Registry System requires that all course sponsors recognize and implement the built-in system criteria for granting CEAU's and awarding IEEE Certificates.

Granting CEAU's:

CEAU's will be granted to continuing education participants who have successfully completed and passed an achievement testing of course content sponsored by--

-- IEEE-EAB or any IEEE entity that implements an IEEE peer evaluated course offering.

-- An ABET accredited department for regular courses taken as non-credit.

Awarding IEEE Certificates:

IEEE Certificates will be awarded to continuing education participants who complete a course sponsored by IEEE-EAB or any IEEE entity as directed by IEEE's Educational Activities Board.

-- An IEEE Certificate of Achievement and/or an appropriate course credit award label will be awarded to the continuing education participant who completes an IEEE peer evaluated course offering and successfully passes an achievement testing of the course content.

-- An IEEE Certificate of Merit will be awarded to the continuing education participant who completes the IEEE peer evaluated course offering and elects not to take or does not pass an achievement testing of the course content.

ABET Exception: - To maintain the security of the IEEE Validation & Registry System and the awarding of CEAU's by an ABET Accredited Department requires a special flag to confirm participant and course attendance information. The flag that connotes confirmed ABET accredited department regular course attendances that have been taken by a participant as non-credit appears in the data bank as "a". Therefore, the confirmation code "a", participant number, sponsor code, course number, course completion date, non-degree credits, type of units, evaluation (when available), and a successfully completed/passed participant performance must be entered into the System to implement a CEAU credit transaction for ABET Accredited Department non-degree course offerings.

AN ABET CEAU TRANSACTION DOES NOT GENERATE THE IEEE LETTER LOGIC AND IS SEPARATE FROM IEEE CEAU STATISTICS.

NOTE:

Non-IEEE-EAB course participant and course attendance information can be processed as tentative and will appear as **course attendance and credits not confirmed. Non-IEEE-EAB System inputs will require confirmation action by the course sponsor/coordinator/instructor before the information is noted as official. The flag that connotes Non-IEEE-EAB course sponsor/coordinator/instructor confirmed information appears in the data bank as "c".

CPT - DATA PROCESSING, LETTER GENERATION AND DISTRIBUTION PROCEDURE

The processing of all data and letters relating to the IEEE Validation & Registry System's transactions are implemented through a CPT-8000 Word Processor, a Racal Vadic VA3455 Modem via a telecommunications link to an IBM 3033 Central Processing Unit, programmed in PL1, and an IBM 3800 Laser Printer at the Neshaminy Valley Information Processing, located in Trevose, Pennsylvania.

When signaled by IEEE Educational Services in NEW YORK, N.Y., or PISCATAWAY, N.J., this automated system will generate all of the appropriate IEEE transactions or transmittal letters, and deliver them to Context, Inc., Philadelphia, Pa., where the materials are given a quality control check, collated and distributed as follows:

-- All Non-IEEE transaction or confirmation request letters and IEEE transcript requests will be mailed direct through the satellite facilities of Context, Inc.

-- All IEEE transaction and transmittal letters, will be collated and distributed as follows...
- ° IEEE Short Course Registrations using letter 15 or 16 will be delivered to IEEE Educational Services, Piscataway, N.J.
- ° All IEEE Home Study or Video Course Registrations and Instructor Transmittals using letters 17, 18, 19, 20, or 21, will be delivered to IEEE Educational Services, New York, N.Y.
- ° All IEEE Course Completion Transmittal letters CE:01, 02, 03, 04, with 09, and when appropriate Course Credit Award Labels, will be delivered to IEEE Educational Services, New York, N.Y.

PRIMARY SYSTEM IDENTIFICATION FOR PARTICIPANT RECORDS

The primary system identification for a Participant Record in the IEEE Continuing Education Validation & Registry System is the IEEE Member Number or the Participant's Non-Member Number as assigned by IEEE Education Services' staff.

- ° If the transaction is an IEEE Home Study or Video Course, send to IEEE Educational Services, New York, N.Y.
- ° If the transaction is an IEEE Short Course, send to IEEE Educational Services, Piscataway, N.J.
- ° If the transaction is a Non-IEEE Course, send to IEEE Special Projects, Piscataway, N.J.

Before entering an addition, change or deletion transaction into the IEEE Validation & Registry System, please observe the following:

TO DETERMINE A PARTICIPANT'S IEEE MEMBER OR NON-MEMBER NUMBER, CHECK THE CURRENT REGISTRY PRINT-OUTS OR DATA BASE EDITORIAL LISTS TO SEE IF THE PARTICIPANT IS ALREADY IN THE SYSTEM; IF FOUND, USE THE SAME NUMBER.

WHEN THE COURSE PARTICIPANT IS AN IEEE MEMBER, scan all the alphabetized and numerical listings that are presently recorded in the IEEE Validation & Registry System. IF NOT FOUND, then interrogate the IEEE Membership Data Base for the IEEE Member's Number.

WHEN THE COURSE PARTICIPANT IS A NON-MEMBER, scan all the alphabetized and numerical listings that are presently recorded in the IEEE Validation & Registry System. IF FOUND in the IEEE Validation & Registry System, use the Non-Member Participant Number that has already been recorded in the IEEE Validation & Registry System.

WHEN YOU CANNOT LOCATE A NON-MEMBER PARTICIPANT'S NUMBER, scan all the non-member numerical listings, note the last assigned non-member number and CREATE a new non-member number from the following series:

- For an IEEE Home Study or Video Course, assign non-member numbers in the NO6XXXX series.
- For an IEEE Short Course, assign non-member numbers in the NO4XXXX series.
- For a Non-IEEE Course, assign non-member numbers in the NO2XXXX series.

BEFORE ANY CPT TRANSMISSION, assuming the information is on a CPT disk, PRINT OUT AN IEEE FILE RECORD OF THE INFORMATION that will be transmitted. Date the IEEE file copy and note on the copy the time of the transmission.

PROCEDURE FOR INITIATING A CPT TRANSMISSION TO THE DATA PROCESSING CENTER:

-- A communications program disk is used to program the CPT8000 for communicating with the Computer at the Data Processing Center. A check of the program recorded on the Communications Disk F4 can be made on the CPT keyboard by keying in label IBM (if PISCATAWAY) -or- C-Test (if New York). The following information should appear on the CPT screen.

```
COMMUNICATIONS.                                    | C-Test will also show:
RATE:  1200                                        |
TRANSMISSION CODE SET:   1  C-ASCII.T1 C-ASCII.T2  | LINES PER PAGE 70
RECEPTION CODE SET:      1  C-ASCII.R              | END OF PAGE CODE
EVEN PARITY                                        | FULL DUPLEX
LINE PAUSE:  99                                    |
```

-- BEFORE TRANSMISSION THE CPT MUST BE PROGRAMMED AS FOLLOWS:

1. Reset the CPT.
2. Load the Communications Disk F4 into CPT Station 1, wait a few seconds for the screen to light up.
3. Depress CODE Key and letter I Key, the screen will read CONTROL 1, type in IBM (if PISCATAWAY) -or- C-TEST (if NEW YORK), wait a few seconds and TTY COMMUNICATIONS ENABLED will appear on the screen. At this point, depress CODE Key and letter K Key.. the screen will read SELECT.. then Key carriage return, the screen will read TRANSMISSION.. then Key carriage return, the screen will read KB+SCREEN..then Key carriage return, the screen will read TTY COMMUNICATIONS ENABLED.
4. Remove the Communications Disk F4 from the CPT Station 1.
5. Then place into the CPT Station 1, the CPT Disk that has recorded on it the information to be transmitted.

TRANSMISSION OF IEEE COURSE REGISTRATIONS OR IEEE COURSE COMPLETIONS FROM IEEE EDUCATIONAL SERVICES, PISCATAWAY, N.J.

Assuming that the appropriate IEEE Course Participant and Attendance Information has been previously recorded on a CPT-8000 Word Processor disk using the System Format, the following applies:
After the CPT-8000 has been programmed and is in the "Communications Enabled" mode, a call on the Modem 'phone should be placed to (212-683-6325); when the communication signal (a steady tone) is received depress the Modem Phone's white hook switch half way (a double steady tone is heard) then begin typing TRETSO and Key carriage return. When the message on the CPT screen reads:

WELCOME TO NVIP
PLEASE SIGN ON

For Short Courses
TYPE...
LOGON(space)E776/PASSWORD(space)ACCT(*CYNJ) and key carriage return.
For Non-IEEE Courses
TYPE...
LOGON(space)E776/PASSWORD(space)ACCT(*MPB1) and key carriage return.

After several lines of acknowledged messages from the computer, the CPT screen will then read: READY (This means you have logged onto the Computer.)
TYPE....
QED SYSB.Nkk.text new Line(80) and key carriage return.
(Nkk is a Sequence number assigned by IEEE Educational Services, Piscataway, N.J.)

The computer will continue with a Computer-generated INPUT number (line number). You are now ready to transmit information from a pre-recorded CPT disk. Then Key IN, type page label and key carriage return. Then depress LINE, CODE and UP keys. A cursor/pointer will run across each line as it transmits information putting a series of numbers before each line.
After every five (5) INPUTS, key carriage return. The Computer will respond with...QED. Type... save. The Computer will respond with... SAVED. Key carriage return and the Computer will respond with INPUT and a line number,
i.e., INPUT
00010
TO TRANSMIT RECORDINGS, THE SYSTEM MUST BE IN THE INPUT MODE.

When the screen is full, page down and skip; call in next record and continue your transmission, repeating page down and skip at the end of each full page until completed.
At the end of the QED transmission, key carriage return and type save.
The Computer will display on the CPT screen..... SAVED
Type END SAVE and the Computer will display on the CPT screen ... SAVED
READY
TYPE....
Printoff (followed by the assigned text sequence number) SYSB.Nkk.text and key carriage return. The Computer will acknowledge and print the contents of the transmission at the Data Processing Center. (READ CAREFULLY AND IF THERE IS AN ERROR MESSAGE, RE-ENTER PRINTOFF.) The Computer will then display on CPT screen...

READY

TYPE....
LOGOFF and key carriage return to get off the Computer.
At the end of the transmission, the CPT screen will read....
LAST STEP COMPLETION CODE WAS USER 0

TRANSMISSION OF IEEE COURSE REGISTRATIONS OR IEEE COURSE COMPLETIONS FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y.

Assuming that the appropriate IEEE Course Participant and Attendance Information has been previously recorded on a CPT-8000 Word Processor disk using the System Format, the following applies:
After the CPT-8000 has been programmed and is in the "Communications Enabled" mode, a call on the Modem 'phone should be placed to (212-683-6325); when the communication signal (a steady tone) is received depress the Modem Phone's white hook switch half way (a double steady tone is heard) then begin typing TRETSO and key carriage return. When the message on the CPT screen reads:

WELCOME TO NVIP
PLEASE SIGN ON

For Home Study/Video(N.Y.)
TYPE...
LOGON(space)E776/PASSWORD(space)ACCT(*FKNY) and key carriage return.

After several lines of acknowledged messages from the computer, the CPT screen will then read: READY (This means you have logged onto the computer.)
TYPE....
QED SYSY.Nkk.text new Line(80) and key carriage return.
(Nkk is a Sequence number assigned by IEEE Educational Services, New York, N.Y.)

The computer will continue with a Computer-generated INPUT number (line number). You are now ready to transmit information from a pre-recorded CPT disk. Then Key IN, type page label and key carriage return. Then depress LINE, CODE and UP keys. A cursor/pointer will run across each line as it transmits information putting a series of numbers before each line.
After every five (5) INPUTS, key carriage return. The Computer will respond with...QED. Type... save. The Computer will respond with... SAVED. Key carriage return and the Computer will respond with INPUT and a line number,
i.e., INPUT
00010
TO TRANSMIT RECORDINGS, THE SYSTEM MUST BE IN THE INPUT MODE.

When the screen is full, page down and skip; call in next record and continue your transmission, repeating page down and skip at the end of each full page until completed.
At the end of the QED transmission, key carriage return and type save.
The Computer will display on the CPT screen..... SAVED
Type END SAVE and the Computer will display on the CPT screen ... SAVED
READY
TYPE....
Printoff (followed by the assigned text sequence number) SYSB.Nkk.text and key carriage return. The Computer will acknowledge and print the contents of the transmission at the Data Processing Center. (READ CAREFULLY AND IF THERE IS AN ERROR MESSAGE, RE-ENTER PRINTOFF.) The Computer will then display on CPT screen...

READY

TYPE....
LOGOFF and key carriage return to get off the Computer.
At the end of the transmission, the CPT screen will read....
LAST STEP COMPLETION CODE WAS USER 0

TO INITIATE A PRODUCTION RUN WITH EDITORIAL LISTS FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y.

Type...
`LOGON E776/PASSWORD ACCT(*PRFK)` and key carriage return.

Response will be...

```
READY
```

Type...
`IEEEFERN` and key carriage return.

*Response will be...

```
IEEE FERN PRODUCTION (NO FULL LISTS)
JOB SUBMITTED FOR EXECUTION.
READY
```

Type...
`LOGOFF` and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...

```
LAST STEP COMPLETION CODE WAS USER 000
```

This procedure will implement appropriate productions from all IEEE Educational Services, NEW YORK, N.Y. stored transmissions and produce a full complement of 21 editorial lists and IEEE non-completed course rosters. Additionally, a second copy of these editorial lists and rosters will be sent to IEEE Educational Services, PISCATAWAY, N.J. When available, copies of NEW YORK transmission print-offs will be sent to NEW YORK, N.Y.

*NOTE: (for IEEEFERN)
Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEEFERN file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-386-7100 (F. Zigman or P. Bagley).

TO INITIATE A PRODUCTION RUN WITH EDITORIAL LISTS FROM IEEE EDUCATIONAL SERVICES, PISCATAWAY, N.J.

Type...
    LOGON E776/PASSWORD ACCT(*PROD) and key carriage return.

Response will be...

```
READY
```

Type...
    IEEESHRT and key carriage return.

*Response will be...

```
IEEE PISCATAWAY PRODUCTION (NO FULL LISTS)
JOB SUBMITTED FOR EXECUTION.
READY
```

Type...
    LOGOFF and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...

```
LAST STEP COMPLETION CODE WAS USER 000
```

This procedure will implement appropriate productions from all IEEE Educational Services, PISCATAWAY, N.J. stored transmissions and produce a full complement of 21 editorial lists and IEEE non-completed course rosters. Additionally, a second copy of these editorial lists and rosters will be sent to IEEE Educational Services, NEW YORK, N.Y. When available, copies of NEW JERSEY transmission printoffs will be be sent to PISCATAWAY, N.J.

*NOTE: (for IEEESHRT)
Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEESHRT file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-386-7100 (F. Zigman or P. Bagley).

TO INITIATE A SPECIAL PRODUCTION RUN WITH EDITORIAL LISTS FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y., OR PISCATAWAY, N.J.

Type...
```
LOGON E776/PASSWORD ACCT(*PROD) and key carriage return.
```

Response will be...

```
READY
```

Type...
```
IEEESHNY and key carriage return.
```

*Response will be...

```
IEEE SHNY PRODUCTION (NO FULL LISTS)
JOB SUBMITTED FOR EXECUTION
READY
```

Type...
```
LOGOFF and key carriage return to get off The Computer.
```

At the end of the transmission, the CPT Screen will read...

```
LAST STEP COMPLETION CODE WAS USER 000
```

This procedure will implement appropriate productions from all IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J., stored transmissions and produce a full complement of 21 editorial lists and IEEE non-completed course rosters. All lists and rosters will be sent to IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J. When available, copies of NEW YORK transmission printoffs will be sent to NEW YORK, N.Y., and copies of NEW JERSEY transmission printoffs will be sent to PISCATAWAY, N.J.

*NOTE: (for IEEESHNY)

Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEESHNY file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-386-7100 (F. Zigman or P. Bagley).

TO INITIATE A PRODUCTION RUN WITH EDITORIAL AND FULL PARTICIPANT/COURSE ATTENDANCE LISTS FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y., OR PISCATAWAY, N.J.

Type...

LOGON E776/PASSWORD ACCT(*PROD) and key carriage return.

Response will be...

```
READY
```

Type...

IEEEFULL and key carriage return.

*Response will be...

```
IEEE FULL PRODUCTION
JOB SUBMITTED FOR EXECUTION
READY
```

Type...

LOGOFF and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...

```
LAST STEP COMPLETION CODE WAS USER 000
```

This procedure will implement appropriate productions from all IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J., stored transmissions and produces all editorial, full participant/course attendance lists and IEEE non-completed course rosters. All lists and rosters will be sent to IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J. When available, copies of NEW YORK transmission printoffs will be sent to NEW YORK, N.Y., and copies of NEW JERSEY transmission print-offs will be sent to PISCATAWAY, N.J.

*NOTE: (for IEEEFULL)

Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEEFULL file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-386-7100 (F. Zigman or P. Bagley).

TO INITIATE THE PRODUCTION OF ALL EDITORIAL, PARTICIPANT/COURSE ATTENDANCE LISTS WITHOUT A PRODUCTION RUN FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y., OR PISCATAWAY, N.J.

Type...

```
LOGON E776/PASSWORD ACCT(*PROD)
```

and key carriage return.

Response will be...

```
READY
```

Type...

```
IEEELIST
```

and key carriage return.

*Response will be...

```
IEEE FILE LISTINGS
JOB SUBMITTED FOR EXECUTION
READY
```

Type...

```
LOGOFF
```

and key carriage return to get off The Computer.

At the end of the transmission, the CPT Screen will read...

```
LAST STEP COMPLETION CODE WAS USER 000
```

This procedure will produce all the editorial and full participant/course attendance lists WITHOUT A PRODUCTION RUN. All lists will be sent to IEEE Educational Services, NEW YORK, N.Y., and PISCATAWAY, N.J.

*NOTE: (for IEEELIST)

Should there be an error in submitting the job for execution before the second computer generated response*, use the CPT for deletion and correction or sign off--no production will have been initiated. However, if the second computer generated response* appears on the CPT screen, the IEEE Production for IEEELIST file listings can only be stopped by IMMEDIATELY calling Context, Inc., 215-286-7100 (F. Zigman or P. Bagley).

SUMMARY OF OUTPUTS AND DISTRIBUTIONS FOR IEEE PRODUCTIONS

Outputs	IEEEFULL	IEEESHNY	IEEEFERN	IEEESHRT	IEEELIST
Sponsor & Participant Master File Update Logs	1 Copy N.Y. 1 Copy N.J. 1 Copy Context	SAME	SAME	SAME	NONE
Sponsor & Participant Full Listings	1 Copy N.Y. 1 Copy N.J.	NONE	NONE	NONE	1 Copy N.Y. 1 Copy N.J.
Participant Letters	Ltrs.1-4 & 9:NY Ltrs.15 & 16:NJ Ltrs.17-21:NY All others:REI via Context	SAME	SAME	SAME	NONE
Error Listings	1 Copy N.Y. 1 Copy N.J. 1 Copy Context	SAME	SAME	SAME	SAME
Participant Summary Listings	1 Copy N.Y. 1 Copy N.J.	SAME	SAME	SAME	SAME
Sponsor/Course Summary Listings & Rosters	1 Copy N.Y. 1 Copy N.J.	SAME	SAME	SAME	SAME
Letter Summary	1 Copy N.Y. 1 Copy N.J. 1 Copy Context	SAME	SAME	SAME	NONE
Print-offs (When available.)	1 Copy N.Y. Transmission Print-offs sent to N.Y. 1 Copy N.J. Transmission Print-offs sent to N.J.	SAME	SAME	SAME	NONE

INDEX OF FILE & EDITORIAL OUTPUTS

- Full Participant Information/Course Attendance File
- Full Sponsor/Course File
- Summary - Participant Attendance by Name
- Sponsor and Courses by Sponsor
- Sponsor by Number
- Courses by Title
- Courses by Class Code
- Institutions of First Degree by Name
- Institutions of First Degree by Number
- Summary IEEE Participants by Number
- Summary Non-IEEE Participants by Number.
- Award Label Titles
- Participant Summary List Makeup
- Sponsor Summary List Makeup
- Duplicate Participant/Attendance Names
- Participant/Attendance File Update Transaction Report
- Sponsor/Course File Update Transaction Report
- Letters sent for IEEE
- Non-Completed Courses
- Transmission Printouts
- Participant Name/ID# Index
- Sponsor Name/ID# Index
- Course Name/ID#/TIP Index

LIST OF TRANSACTION CODES

-	!pi	Participant Information - New participant, new attendance data or both.
-	!pc	Participant Change - A change of participant information or attendance information or both.
-	!si	Sponsor Information - New sponsor information and/or course information.
-	!sc	Sponsor Change Information or Course Change Information or both.
-	!cl	Confirmation Letter - Key information from Letter :07 - then enter on Line 6 one of these codes.... "c" Confirmed by sponsor/coordinator/instructor. "i" Confirmed by IEEE-EAB. "a" Confirmed by an ABET accredited department.
-	!pd	Participant Deletion.
	!ad	Attendance Deletion.
-	!sd	Sponsor Deletion.
	!cd	Course Deletion.
-	!tr	Transcript Request.
-	!pc	Special Letter Request.
-	!cc	Course completion.

CAUTION

DO NOT TRANSMIT AN !cc TRANSACTION WITH ANY OTHER TRANSACTION FOR THE SAME PARTICIPANT NUMBER, i.e., the same transmission to the Data Processing Center.

WAIT until the !pi, !pc, etc., information appears in the Editorial Lists. THEN transmit the !cc completion entry transaction for the participant.

IEEE - HARD COPY INPUT FORM

CONTINUING EDUCATION COURSE ATTENDANCE AND PARTICIPANT INFORMATION FORM

Please enter this information into the "Validation of the Continuing Education Achievement of Engineers Registry"

IMPORTANT: Please print or type.

FIELD CODE

PARTICIPANT INFORMATION

a IEEE MEMBER NO. ____ IEEE MEMBER (Check one) YES ☐ NO ☐

b NAME ____ (Mr./Mrs., etc.) First Middle Initial Last (Jr., Ph.D., etc.)

c ADDRESS ____

d ____

e ____

f ____ City State Zip Code

g TELEPHONE NO. ____ - ____ - ____ Ext. ____ h Business ☐ Home ☐ (Check one)

COURSE ATTENDANCE

p For IEEE use only. ☐☐☐☐☐☐☐☐☐☐ SPONSOR ABET ACCREDITED A YES ☐ (Check one) NO ☐

q COURSE SPONSOR ____ (Institution Name or IEEE entity)

r Course Coordinator/ Instructor ____ First Middle Initial Last

s ADDRESS ____

t ____

u ____

v ____ City State Zip Code

w TELEPHONE NO. ____ - ____ - ____ Ext. ____

x COURSE NUMBER ____ 2 HOME STUDY YES or NO ☐ ☐ y DATE COMPLETED ____ Mo. ____ Yr.

z COURSE TITLE ____

X WHERE HELD ____

Y ADDRESS ____

Z (Blank if Home Study) ____

1 ____ City State Zip Code

3 NON DEGREE CREDITS ____ . ____ 4 TYPE OF UNIT ____ (CEU, HRS., CEAU, etc.)

5 For IEEE use only. ☐☐☐☐☐☐☐☐☐☐ 6

$ ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

7 (over) PLEASE COMPLETE THE COURSE EVALUATION QUESTIONNAIRE ON THE BACK OF THIS FORM

3-01-82

COURSE EVALUATION QUESTIONAIRE

MARKING INSTRUCTIONS
AS - If you **agree strongly** with the item
A - If you **agree** moderately with the item
D - If you **disagree** moderately with the item
DS - If you **disagree strongly** with the item

PLEASE respond to each statement.

NOTE: WHEN ENTERING COURSE EVALUATION IN FIELD CODE 7, USE VALUES: 4 for AS, 3 for A, 2 for D, 1 for DS.

EXAMPLE........ (4) (3) (2) (1)

1. It was a very worthwhile course. AS__ A__ D__ DS__
2. I would take another course that was taught this way. AS__ A__ D__ DS__
3. The course material was present in logical content units. AS__ A__ D__ DS__
4. The course material was too difficult. AS__ A__ D__ DS__
5. The course content was appropriate to the aims and objectives of the course. AS__ A__ D__ DS__
6. The course was quite interesting. AS__ A__ D__ DS__
7. It was not clear why certain things were being taught. AS__ A__ D__ DS__
8. NOT much was gained by taking this course. AS__ A__ D__ DS__
9. I would have preferred another method of teaching this course. AS__ A__ D__ DS__
10. Course concepts were related in a systematic manner. AS__ A__ D__ DS__
11. The course material seemed worthwhile. AS__ A__ D__ DS__
12. The course was quite boring. AS__ A__ D__ DS__
13. I have learned basic information in this course which I will be able to relate to other situations. AS__ A__ D__ DS__
14. Overall the course was quite good. AS__ A__ D__ DS__
15. I learn more when other teaching methods are used. AS__ A__ D__ DS__
16. For the time allotted, topic coverage was exhaustive. AS__ A__ D__ DS__
17. Some things were NOT explained very well. AS__ A__ D__ DS__
18. I now feel able to communicate course material to others. AS__ A__ D__ DS__
19. I have become more confident in this area because of this course. AS__ A__ D__ DS__
20. The course was well organized. AS__ A__ D__ DS__
21. I think that the course was taught quite well. AS__ A__ D__ DS__
22. The course content was excellent. AS__ A__ D__ DS__
23. Too much material was covered in this course. AS__ A__ D__ DS__
24. The course was helpful in developing new skills. AS__ A__ D__ DS__
25. I developed an ability to evaluate work in this field. AS__ A__ D__ DS__

The Family Educational Rights and Privacy Act of 1974, effective January 1, 1975 provides for the release of Course Attendance and Participant Performance Information only upon receipt by the course sponsor of a written consent by the individual concerned.

"I consent to the release of my Course Attendance and Performance Information to the IEEE Validation of the Continuing Education Achievement of Engineers Registry"

Participant's Signature ______________________ Date ______________________

IEEE Validation of the Continuing Education Achievement of Engineers Registry
445 Hoes Lane, Piscataway, New Jersey 08854

SYSTEM FORMAT FOR ALL IEEE COURSES

	Field Code & (# ch.)
Transaction Code	(See List of Transaction Codes.)
Participant Number	a ..(7 ch.)
Participant Name	b ..(36 ch.)
Participant Address	c ..(32 ch.)
Optional Address	d ..(32 ch.)
Optional Address	e ..(32 ch.)
City, State, Zip	f ..(32 ch.)
Telephone Number	g ..(20 ch.)
Home/Business h/b	h ..(1 ch.)
Sponsor Code	p ..(10 ch.)
Sponsor ABET Accredited	A ..(3 ch.)
Course Sponsor	q ..(32 ch.)
Course Coordinator/Instructor	r ..(32 ch.)
Sponsor or Coord./Instr. Address	s ..(32 ch.)
Opt.Sponsor or Coord./Instr. Address	t ..(32 ch.)
Opt.Sponsor or Coord./Instr. Address	u ..(32 ch.)
Sponsor or Coord./Instr.City,State, Zip	v ..(32 ch.)
Sponsor or Coord./Instr.Telephone No.	w ..(23 ch.)
Course ID Number	x ..(10 ch.)
Home Study	2 ..(1 ch.)
Date Completed (MMYY)	y ..(4 ch.)
Course Title	z ..(60 ch.)
Where Held-Organization	X ..(30 ch.)
Where Held-Room	Y ..(30 ch.)
Where Held-Street	Z ..(30 ch.)
Where Held-City, State, Zip	1 ..(20 ch.)
Non-Degree Credits	3 ..(3 ch.)
Type of Units	4 ..(8 ch.)
Classification Code	5 ..(6 ch.)
Confirmation	6 ..(1 ch.)
Payment	$ ..(35 ch.)
Evaluation	7 ..(63 ch.)
Participant Performance	8 ..(6 ch.)
Course Sequence Number	9 ..(5 ch.)
Special Letter Request (2 digits)	0 ..(2 ch.)

Note for Field Code f: For Canadian Addresses, last character must be ended with * For all other Foreign Addresses, last character must be @

Note for Field Code y: Must be blank for IEEE Course Registrations.

Note for Field Codes X,Y,Z, 1: For Home Study Courses these lines are blank.

Note for Field Code 6: For IEEE COURSE COMPLETIONS ONLY, type i.

Note for Field Code $: Identify Payment as appropriate. Limited to 32 chs.

Note for Field Code 0 (zero) For IEEE COURSE REGISTRATIONS ONLY, enter proper letter no. CE:15,CE:16, CE:17,etc. If no letter is desired, enter 99.

A participant transaction with 99 in Field Code 0 (zero) MUST NOT be in a Production Run that includes other transactions for the same participant number.

DO NOT ENTER MORE THAN ONE SPECIAL LETTER REQUEST AT ANY ONE TIME.

- -

FORMAT AND SPECIAL CHARACTER DETAIL:

Reference the participant name line, type a colon in place of a space.

EXAMPLE.. Mr.:James B.:Smith
EXAMPLE.. Mr.:James B.:Smith,:Jr.,PhD.
EXAMPLE.. Lt.Col.:James B.:Smith:IV

IEEE member numbers should not have any letter prefix.

EXAMPLE.. 1234567 (7 digits only)

SAMPLE

INITIAL ENTRY OF IEEE SHORT COURSE REGISTRATION ADVANCED PAYMENT/PURCHASE ORDER

```
!pi
a N111111
b Mr.:David Z.:Candy
c 11111 Frenchton Pl.
d
e
f Gaithersburg, MD 72087
g 202-724-0000
h b
p N0010
A
q IEEE-EAB
r Mike Allwood
s National Telecom. & Inform. Adm.
t Room 111
u 1325 G St. NW
v Washington, DC 20005
w 202-724-3333
x 1061
2
y                                 ... Note for Field Code y: Must be blank
z Satellite Comm. Sys.                for IEEE Registrations.
X National Telecom. & Inform Adm.
Y Room 111
Z 1325 G St. NW
1 Washington, DC 20005
3
4
5 1021
6
$ CC#2109-876-129-542 $150 10-26-81
7
8
9 544
0 16     ... Note for Field Code 0(zero):
             If not paid or payment at
             the door, use 15.
```

PRECAUTION

Use all Field Codes even though the Field is blank. This will make certain that all Fields of the participant's record that should be blank are indeed blank.

SAMPLE

INITIAL ENTRY OF IEEE HOME STUDY REGISTRATION (EXCEPT TECHNICALLY WRITE!)

```
!pi
a 1000001
b Mr.:James F.:Allwood
c 27 Lynn St.
d
e
f Frederick, MD 21701
g 301-831-8888
h h
p N0010
A
q IEEE-EAB
r Educational Registrar
s IEEE
t 345 E. 47th St.
u
v New York, NY 10017
w 212-644-7860
x HS9013
2 Yes
y
z Heathkit ETS3200 Digital Techniques
X
Y
Z
1
3
4
5 1621
6
$ CK#1234 $150 10-26-81
7
8
9
0 17
```

...Note for Field Codes q,r,s,t,u,v:
- For the Technically Write! Home Study Course, the assigned Instructor's Address and Telephone No. (if available) are entered on these lines.

...Note for Field Code y: Must be blank for IEEE Registrations.

PRECAUTION

Use all Field Codes even though the Field is blank. This will make certain that all Fields of the participant's record that should be blank are indeed blank.

SAMPLES

COMPLETION ENTRY OF IEEE SHORT COURSE

```
!cc
a N040412
p N0010
x 1061
y 1181
3 018
4 CEAU
6 i
7 4432332123314322233333233
9 544
```

NOTE: An !pi transaction code MUST be used for a course completion when the participant is NOT presently in the Data Base. DO NOT TRANSMIT AN !cc TRANSACTION WITH ANY OTHER TRANSACTION FOR THE SAME PARTICIPANT NUMBER, i.e., the same transmission to the Data Processing Center. WAIT until the !pi, !pc, etc., information appears in the Editorial Lists. THEN transmit the !cc completion entry transaction for the participant.

... Note for Field Code y:
- Completion date is written MMYY.

... Note for Field Code 3:
- Credits are written as three characters. DO NOT USE A DECIMAL POINT i.e., 4.0 is entered as 040.

COMPLETION ENTRY OF IEEE HOME STUDY COURSE

```
!cc
a 5372321
p N0010
x HS9013
y 0681
3 040
4 CEAU
6 i
7 4432332123314322233333233
```

... SEE NOTES ABOVE

EXAMPLES OF IEEE SYSTEM OUTPUTS

SHORT-COURSE REGISTRATION REPLY - NOT PAID

. 0002

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Carl T. Reich
Grand River Dam Authority
Drawer G
Vinita, OK 74301

Your Participant No. 6666666

Dear Mr. Reich:

Thank you for your registration in the following course:

Sponsor Name: IEEE-E.A.B.
Course Number: 1052
Course Name: Oper. Amplifier Theory & Appli.

This confirmation letter and YOUR PAYMENT AT THE DOOR will be used for your admittance to the class room.

Location - Rancho Seco Nuclear Power Plan
Conference Room #205
6201 "S" Street
Sacramento, CA

Should you have any further questions, please contact the coordinator/instructor:

Course Coordinator/Instructor: Educational Registrar
Address:
IEEE - EAB
21st Floor, Suite #2132
345 E. 47th Street
New York, NY 10017

Thank you for your interest in IEEE's quality education programs.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

CE:15

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

SHORT COURSE REGISTRATION REPLY - ADVANCED PAYMENT/PURCHASE ORDER

0001

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. John R. Garo
60B Canter Ave.
Bremerton, WA 98310

Your Participant No. 8888888

Dear Mr. Garo:

Thank you for your registration in the following course:

Sponsor Name: IEEE-E.A.B.
Course Number: 1041
Course Name: National Electric Safety Code

This confirmation letter is a receipt for your ADVANCED PAYMENT/ PURCHASE ORDER of the course registration fee and should be used for admittance to the class room.

Location - A & M University
Bldg. #4, Room 308
Monroe & Chase Streets
Dallas, Texas

Should you have any further questions, please contact the coordinator/ instructor:

Course Coordinator/Instructor: Educational Registrar
Address:
IEEE - EAB
21st Floor, Suite 2132
345 E. 47th Street
New York, NY 10017

Thank you for your interest in IEEE's quality education programs.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

PAYMENT TRANSACTION
cc#: 67819345-7896-01-9 $150 10-15-81

CE: 16

3-01-82

(Pg. 231

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

HOME STUDY COURSE REGISTRATION REPLY-ADVANCED PAYMENT/PURCHASE ORDER (EXCEPT HS9001 TECHNICALLY WRITE!)

0031

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Lt. Alain J. Beau
Officers Mess
CFB Shearwater, Nova Sco.
Canada SOJ 3A0

Your Participant No. 7777777

Dear Lt. Beau:

Thank you for your Home Study order and payment transaction for:

Course Number: E20
Course Name: Understanding Micros thru Software Design

Please be advised that when your materials are shipped, delivery will be made by United Parcel Service (U.P.S.). In the event that course materials cannot be delivered by U.P.S., delivery will be made by Parcel Post.

In addition, IEEE's suppliers will honor a 90-day warranty period beginning with IEEE's placement of your order. Should warranty service be required, please contact the IEEE supplier direct and present this letter.

IEEE will enter your course participation in a computer-based, record-keeping system that validates the Technical Continuing Education Achievement of Engineers. Enclosed is a description of this program.

When you have finished the course, COMPLETE AND RETURN the enclosed form to the New York address given below. All questions should be directed to the New York address and telephone number.

Thank you for your interest in IEEE quality education programs.

Very truly, yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

Payment Transaciton:
ck#1438 $150 10-26-81

CE:17

3-01-82

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

HOME STUDY COURSE REGISTRATION REPLY-ADVANCED PAYMENT/PURCHASE ORDER FOR HOME STUDY HS9001 TECHNICALLY WRITE! ONLY

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Stephen R. Lee
2631 Pleasant Street
Oakland, CA 94602

Your Participant No. 7486418

Dear Mr. Lee:

Thank you for your Home Study order and payment transaction for:

Course Number: HS9001
Course Name: Technically Write!

Your course materials are being shipped under seperate cover. When you have received your course materials and have checked the contents to be certain all the required items are included, be sure to return the ACKNOWLEDGEMENT OF RECEIPT OF MATERIALS POSTCARD which is enclosed in the course binder. You will be assigned an instructor only when IEEE has received this card at the New York address given below.

IEEE will enter your course participation in a computer-based, record-keeping system that validates the Technical Continuing Education Achievement of Engineers. Enclosed is a description of this program.

When you have finished the course, COMPLETE AND RETURN the enclosed form to the New York address given below. All questions should be directed to the New York address and telephone number.

Thank you for your cooperation.

Very truly, yours,

John F. Wilhelm
Staff Director, Educational Services

Payment Transaction:
PO#01114 $150 10-26-81

CE:18

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

HOME STUDY COURSE HS9001 TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT (U.S. AND CANADA)

0018

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Wai-Ki Yip
1319 Pawtucket Blvd, Apt 34
Lowell, MA 01854

Your Participant No. 7021165

Dear Mr. Yip:

You have now received all the materials necessary for:

Course Number: HS9001
Course Name: Technically Write!

We have selected as your INSTRUCTOR:

Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

As we feel that you will benefit from your association with your assigned instructor, a brief biography is enclosed for your reference.

The date of this letter has been entered on your files as your OFFICIAL START DATE. You have 3-1/2 months from this date to complete the course. If for some reason you cannot maintain this time schedule, please notify your course instructor. Please retain this letter for your records.

Should you encounter any problems or find that you have questions regarding course procedures, please contact IEEE at the New York address given below. Thank you for enrolling in "Technically Write!" and I hope that the course proves beneficial to your needs.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

cc: Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

Encl.

CE:19

3-01-82

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

HOME STUDY COURSE HS9001 TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT FOR FOREIGN STUDENTS ONLY (CANADA NOT INCLUDED)

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. David Ian Orenstein
102-55 67th Drive
Moscow, RUSSIA K35 L08

Your Participant No. 7470594

Dear Mr. Orenstein:

You have now received all the materials necessary for:

Course Number: HS9001
Course Name: Technically Write!

We have selected as your instructor:

Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

As we feel that you will benefit from your association with your assigned instructor, a brief biography is enclosed for your reference.

The date of this letter has been entered on your files as your OFFICIAL START DATE. You have 12 months from this date to complete the course. Due to the possibility of mail delays or conditions beyond your control, you may extend the course duration an additional 6 months (18 months total). However, you MUST notify your instructor of your intention so that your projected assignment schedule can be realigned. Please retain this letter for your records.

Should you encounter any problems or find that you have questions regarding course procedures, please contact IEEE at the New York address given below. Thank you for enrolling in "Technically Write!" and I hope that the course proves beneficial to your needs.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

cc: Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

Encl.

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

HOME STUDY COURSE INSTRUCTOR PACKET TRANSMITTAL LETTER

0032

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Craig Harkins
27 Heath Road
Fishkill, NY 12524

Your Participant No. 7470594

SUBJECT: INSTRUCTOR PACKET

Dear Instructor:

Enclosed are the materials comprising your Instructor Packet for:

Course Number: HS9001
Course Name: Technically Write!

A check list is included so that you can be sure all proper materials have been received. In addition to the complete "Technically Write!" course, your Instructor's Packet should include the following:

______ 2 Summary of Writing Capability sheets.
______ 2 Record of Assignment sheets.
______ 25 Sheets of white bond paper.
______ 25 White envelopes.
______ 6 Manilla envelopes.
______ 1 Set "Technically Write!" answer sheets.
______ 1 Expense form.

Your new student's name and complete address can be found below. Please inform IEEE at the New York address given below if any item has not been enclosed.

If you find, as an instructor, that you require any materials not included in our current packet, please let IEEE know as we may be able to revise future Instructor's Packets. Thank you for your cooperation.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Student:

Mr. David Ian Orenstein
102-55 67th Drive
Moscow, RUSSIA K35 L08

Encl.
3-01-82

CE:21

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

IEEE SPONSORED COURSE INITIAL IEEE CERTIFICATE OF ACHIEVEMENT AND COURSE CREDIT AWARD LABEL - CEAU TRANSACTION

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Richard S. Davis
737 Butternut Street, NW
Washington, DC 20012

Your Participant No. 6852842

Dear Mr. Davis:

This is to acknowledge receipt of a report of your having completed the following course:

Sponsor Name: IEEE-E.A.B.
Course Number: E20
Course Name: Understanding Microprocessors Thru Software Design
Completion Date: 04-79
Non-Degree Credits: 6.0 CEAU

In recognition of this achievement, we are enclosing a Course Credit Award Label to be placed on your Certificate of Educational Achievement.

Our records indicate that this is your first course earning Continuing Education Achievement Units (CEAUs), so we are also enclosing your first Certificate of Achievement. When you have earned eight labels needed to fill this Certificate, we will automatically send you another Certificate. Also enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

40

3-01-82

CE:01

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THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant:
Mr. Richard S. Davis
737 Butternut Street, NW
Washington, DC 20012

Transcript Date: 17 December 1981

Participant Number: 6852842

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
E20	Understanding Microprocessors Thru S IEEE-E.A.B.	04-79	6.0 CEAU

Transcript prepared under
the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type: 6.0 CEAU

CE:09

41

3-01-82

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

CERTIFICATE OF EDUCATIONAL ACHIEVEMENT

This certificate is presented to

RICHARD S. DAVIS

for successfully completing the courses
sponsored by the IEEE Educational Activities Board

IEEE EDUCATIONAL ACTIVITIES BOARD

G W Ernst
VICE PRESIDENT, EDUCATIONAL ACTIVITIES

Darrell L. Vines
CHAIRPERSON, EAB CONTINUING EDUCATION COMMITTEE

John F. Wilhelm
STAFF DIRECTOR, IEEE EDUCATIONAL SERVICES

The program you have completed is just one of the many top-quality educational courses amassed by IEEE Continuing Education. So that you and your colleagues can obtain the information so vital to continued professional growth the programs include "live" and video-tape short courses and a variety of home study offerings. All are designed to add new skills or sharpen old ones.

THE INSTITUTE OF
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ELECTRONICS
ENGINEERS, INC

J. F. Wilhelm, Staff Director
Educational Services

PLEASE PLACE YOUR ADDRESS LABEL HERE

☐ I am interested in scheduling IEEE Short courses for my:

☐ IEEE Section ☐ Company, ☐ University.

Please send me information regarding your:

☐ Home study programs

☐ Video-tape programs

Fold and detach along dotted line — return top portion

So that we may continue to serve your education needs, please complete the above card and return it to us today. No stamp is required. For identification, we ask that you remove your address label below and affix it on the card above in the space provided.

This is your personal CEAU record and should only be affixed on your Certificate. It also identifies the specific IEEE Continuing Education Program you've successfully completed.

We ask that you remove the label below and affix it to the left margin of the Certificate of Achievement.

The self-stick label has been designed so that the right portion of the label (from mid-point to right edge) will be on the front of the Certificate. Bend the remainder of the label around the left edge onto the back of your Certificate.

A new Certificate will be issued when:

1- you complete your first IEEE Continuing Education Program after January 1, 1979.
2- you have affixed 8 labels to a Certificate and qualify for an additional award.

44

Mr. Richard S. Davis
737 Butternut Street, NW
Washington, DC 20012

Richard S, Davis	UND MICRO S/W DES
6852842	04-79
E-20	6.0 CEAU

(COURSE CREDIT - AWARD LABEL - PLEASE AFFIX ON YOUR CERTIFICATE)

PLEASE SEE OTHER SIDE

45

IEEE SPONSORED COURSE CREDIT AWARD LABEL - CEAU TRANSACTION

0011

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Michael E. Thuot
Los Alamos Scientific Lab
Group Q-10, Mail Stop 764
P.O. Box 1663
Los Alamos, NM 87545

Your Participant No. 6853394

Dear Mr. Thuot:

This is to acknowledge receipt of a report of your having completed the following course:

Sponsor Name:	IEEE-E.A.B.
Course Number:	1027
Course Name:	Practical Application Sym. Comp.
Completion Date:	08-81
Non-Degree Credits:	1.2 CEAU

In recognition of this achievement, we are enclosing a Course Credit Award Label to be placed on your Certificate of Educational Achievement.

Also enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

CE:02

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ENGINEERS, INC.

TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant: Transcript Date: 17 December 1981

Mr. Michael E. Thuot
Los Alamos Scientific Lab
Group Q-10, Mail Stop 764
P.O. Box 1663
Los Alamos, NM 87545

Participant Number: 6853394

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
1018	Control of Electromagnetic Interfere IEEE-E.A.B.	09-79	1.2 CEAU
1027	Practical Application Sym. Comp. IEEE-E.A.B.	08-81	1.2 CEAU

Transcript prepared under the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type: 2.4 CEAU

CE:09

47

3-01-82

The program you have completed is just one of the many top-quality educational courses amassed by IEEE Continuing Education. So that you and your colleagues can obtain the information so vital to continued professional growth the programs include "live" and video-tape short courses and a variety of home study offerings. All are designed to add new skills or sharpen old ones.

THE INSTITUTE OF
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ENGINEERS, INC.

J. F. Wilhelm, Staff Director
Educational Services

PLEASE PLACE YOUR ADDRESS LABEL HERE

☐ I am interested in scheduling IEEE Short courses for my:
☐ IEEE Section ☐ Company, ☐ University.

Please send me information regarding your:
☐ Home study programs
☐ Video-tape programs

Fold and detach along dotted line — return top portion

So that we may continue to serve your education needs, please complete the above card and return it to us today. No stamp is required. For identification, we ask that you remove your address label below and affix it on the card above in the space provided.

This is your personal CEAU record and should only be affixed on your Certificate. It also identifies the specific IEEE Continuing Education Program you've successfully completed.

We ask that you remove the label below and affix it to the left margin of the Certificate of Achievement.

The self-stick label has been designed so that the right portion of the label (from mid-point to right edge) will be on the front of the Certificate. Bend the remainder of the label around the left edge onto the back of your Certificate.

A new Certificate will be issued when:

1- you complete your first IEEE Continuing Education Program after January 1, 1979.
2- you have affixed 8 labels to a Certificate and qualify for an additional award.

[redacted]

[redacted]

(COURSE CREDIT - AWARD LABEL - PLEASE AFFIX ON YOUR CERTIFICATE)

PLEASE SEE OTHER SIDE

IEEE SPONSORED COURSE AN ADDITIONAL CERTIFICATE OF ACHIEVEMENT AND COURSE CREDIT AWARD LABEL - CEAU TRANSACTION

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Peter Greene
5-B Pine Cove
Mt. Laurel, NJ 08054

Your Participant No. 6884035

Dear Mr. Greene:

This is to acknowledge receipt of a report of your having completed the following course:

Sponsor Name:	IEEE-E.A.B.
Course Number:	1096
Course Name:	Digital Signal Processing
Completion Date:	10-80
Non-Degree Credits:	1.0 CEAU

In recognition of this achievement, we are enclosing a Course Credit Award Label to be placed on your Certificate of Educational Achievement.

Our records show that your current Certificate is already filled with Labels. Accordingly we are enclosing a new Certificate.

Also enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

CE:03

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TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant:
Mr. Peter Greene
5-B Pine Cove
Mt. Laurel, NJ 08054

Transcript Date: 17 December 1981

Participant Number: 6884035

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
HS9013	Digital Techniques ETS3200 IEEE-E.A.B.	01-80	4.0 CEAU
E-09	Managing a Professional Practice (Consulting Bus.) IEEE-E.A.B.	02-80	2.5 CEAU
1005	Microprocessor - 1 Day IEEE-E.A.B.	03-80	0.6 CEAU
1001	CAMAC IEEE-E.A.B.	04-80	1.2 CEAU
1006	Microprocessor Sem - 2 Days IEEE-E.A.B.	05-80	1.2 CEAU
1205	Fundamentals of Systems Grounding and Protection IEEE-E.A.B.	06-80	1.8 CEAU
1039	Basic Project Management IEEE-E.A.B.	08-80	1.2 CEAU
1151	Microprocessor Programming Workshop IEEE-E.A.B.	09-80	3.0 CEAU
1096	Digital Signal Processing IEEE-E.A.B.	10-80	1.0 CEAU
	Totals by Type:		16.5 CEAU

Transcript prepared under
the supervision of
John F. Wilhelm,
Staff Director,
Educational Services

51

CE:09

THE INSTITUTE OF
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ELECTRONICS
ENGINEERS, INC.

CERTIFICATE OF EDUCATIONAL ACHIEVEMENT

This certificate is presented to

PETER GREENE

for successfully completing the courses
sponsored by the IEEE Educational Activities Board

E W Ernst
VICE PRESIDENT, EDUCATIONAL ACTIVITIES

Darrell L. Vines
CHAIRPERSON, EAB CONTINUING EDUCATION COMMITTEE

John F. Wilhelm
STAFF DIRECTOR, IEEE EDUCATIONAL SERVICES

The program you have completed is just one of the many top-quality educational courses amassed by IEEE Continuing Education. So that you and your colleagues can obtain the information so vital to continued professional growth the programs include "live" and video-tape short courses and a variety of home study offerings. All are designed to add new skills or sharpen old ones.

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J. F. Wilhelm, Staff Director
Educational Services

☐ I am interested in scheduling IEEE Short courses for my:

☐ IEEE Section ☐ Company, ☐ University.

PLEASE PLACE YOUR ADDRESS LABEL HERE

Please send me information regarding your:

☐ Home study programs

☐ Video-tape programs

Fold and detach along dotted line – return top portion

So that we may continue to serve your education needs, please complete the above card and return it to us today. No stamp is required. For identification, we ask that you remove your address label below and affix it on the card above in the space provided.

This is your personal CEAU record and should only be affixed on your Certificate. It also identifies the specific IEEE Continuing Education Program you've successfully completed.
We ask that you remove the label below and affix it to the left margin of the Certificate of Achievement.
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A new Certificate will be issued when:

1- you complete your first IEEE Continuing Education Program after January 1, 1979.
2- you have affixed 8 labels to a Certificate and qualify for an additional award.

Mr. Peter Greene
5-B Pine Cove
Mt. Laurel, NJ 08054

Peter Greene	DIG SIG PROC
6884035	10-80
1096	1.0 CEAU

(COURSE CREDIT - AWARD LABEL - PLEASE AFFIX ON YOUR CERTIFICATE)

PLEASE SEE OTHER SIDE

IEEE SPONSORED COURSE IEEE CERTIFICATE OF MERIT TRANSACTION

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Thomas J. Waters
10313 S.W. Trapper Terr.
Beaverton, OR 97005

Your Participant No. 6975403

Dear Mr. Waters:

This is to acknowledge receipt of a report of your having completed the following course:

Sponsor Name:	IEEE-E.A.B.
Course Number:	1026
Course Name:	PROT. & GRNDG. DIST SYSTEMS
Completion Date:	03-81

In recognition of this achievement, we are enclosing a Certificate of Merit.

Also enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

CE:04

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TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant:
Mr. Thomas J. Waters
10313 S.W. Trapper Terr.
Beaverton, OR 97005

Transcript Date: 17 December 1981

Participant Number: 6975403

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
1026	PROT. & GRNDG. DIST SYSTEMS IEEE-E.A.B.	03-81	

Transcript prepared under
the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type:

CE:09

CERTIFICATE OF MERIT

This certificate is presented to

THOMAS J. WATERS

for completing a course in

PROTECTION AND GROUNDING OF DISTRIBUTION SYSTEMS

IEEE EDUCATIONAL ACTIVITIES BOARD

E W Ernst

VICE PRESIDENT, EDUCATIONAL ACTIVITIES

Darrell L. Vines

CHAIRPERSON, EAB CONTINUING EDUCATION COMMITTEE

John F. Wilhelm

DIRECTOR, IEEE EDUCATIONAL SERVICES

NOTES

60

TRANSCRIPT REQUEST

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Stephen L. Carmichael
8840 Nimbus Way
Orangevale, CA 95662

Your Participant No. 7406432

Dear Mr. Carmichael:

Enclosed is a Transcript of your Continuing Education Achievements that has been recorded in the IEEE Validation of the Continuing Education Achievement of Engineers Registry for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number on future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

CE:14

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TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant:
Mr. Stephen L. Carmichael
8840 Nimbus Way
Orangevale, CA 95662

Transcript Date: 17 December 1981

Participant Number: 7406432

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
1006	Microprocessor Seminar IEEE-E.A.B.	09-80	0.0
1007	Microprocessor Programming Workshop IEEE-E.A.B.	10-80	3.0 CEAU
1011	Linear Integrated Circuit Appli IEEE-E.A.B.	10-80	3.0 CEAU
1052	Oper Amplifier Theory & Appli IEEE-E.A.B.	10-80	0.0

Transcript prepared under
the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type: 6.0 CEAU

CE:09

INTENTION TO PARTICIPATE WITHOUT A REPORT OF ATTENDANCE

0007

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Giannino B. Alberti, PE
1401 Golfview Drive
Daytona Beach, FL 32014

Your Participant No. 6820500

Dear Mr. Alberti:

This is to acknowledge receipt of your intention to participate in the IEEE project for Validation of the Continuing Education Achievement of Engineers.

Enclosed is a sample transcript. We will send you an updated copy of your transcript in acknowledgement of each course that you report to us. The transcript will show your continuing education record for the period beginning 1 January 1979.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

We hope you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

CE:06

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THE INSTITUTE OF
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TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant: Transcript Date: 17 December 1981

Mr. Giannino B. Alberti, PE
1401 Golfview Drive
Daytona Beach, FL 32014

Participant Number: 6820500

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
COM16	The Art of Photocomposition Systems GIA, Washington, DC	01-80	1.8 CEU
CIS030	**User-Friendly Systems University of Pennsylvania, Phila.	01-80	3.0 CEAU

**COURSE ATTENDANCE AND CREDITS NOT CONFIRMED

************************ SAMPLE TRANSCRIPT ************************

```
   *      SSSSS      A      M      M   PPPPPP    L         EEEEEE      *
  ***    S     S    A A     MM    MM   P     P   L         E          ***
 *****   S          A A     M M  M M   P     P   L         E         *****
*******   SSSSS    AAAAA    M  MM  M   PPPPPP    L         EEEE     *******
 *****         S  A     A   M      M   P         L         E         *****
  ***    S     S A       A  M      M   P         L         E          ***
   *      SSSSS  A       A  M      M   P         LLLLLLL   EEEEEE      *
```

Transcript prepared under
the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type:
3.0 CEAU
1.8 CEU

CE:13

61

TRANSACTION PRECAUTIONS, SPECIAL PROCEDURES, RECORD FORMATS AND EXAMPLES

CPT DISK FORMAT

Transmissions should be recorded on CPT disk using the System record format and characters for the information to be transmitted. The Computer is programmed not to accept certain characters in the transmission information-identification.

- Do not use the dash or space in the absence of a number, letter, etc.
- Be sure to use the number "0" and not the capital "O" in your transmission sequence.
- 0000(zeros) in Field Code y will remove participant from a Non-Completed Course list without having completed the course.

CANADIAN, FOREIGN OR MISSING DOMESTIC ADDRESSES

The last character of the last line (Field Code f) of any foreign or missing domestic address must be concluded with the characters * or @ as shown in the following examples. This suppresses the missing zip code warning message on the error listing Internal Format Field Code 05.

For example:

Foreign Address: (Canada only)	Mr. Graham J. Bell 2-1183 Ambrose Avenue Prince Rupert, B.C. Canada V8J 2C5*
Foreign Address: (Canada NOT included)	Mr. Ahmad M. Abdelmoety P.O. Box 6372 Riyadh Saudi Arabia @
Domestic Address:	Mr. James B. Smith 1234 Main Street New York, NY*
No Address:	Mr. James B. Smith * (Must be entered in Field Code f.)

LOGON PASSWORD

Contact IEEE Educational Services, New York, N.Y., or Piscataway, N.J., for the appropriate LOGON PASSWORD.

TO PLAY BACK ALL THE INFORMATION IMMEDIATELY AFTER A CPT DATA TRANSMISSION type L and key carriage return... HOWEVER, before asking the Computer to play back you must set a line limit = Code "OUT" and note status line; type in number 66, or the number of lines that are on the page to be played back and key carriage return. This will eliminate the CPT screen from becoming full and locking up.* Press "OUT" key, back space once and type the number 0 . This will remove the system from Station I. Type label test and key carriage return. Type L and key carriage return.

The Computer will respond and display the entire transmitted data set information.

When the test (or playback) is completed, Key Code "OUT" again and change line limit to 0 . Key carriage return. (VERY IMPORTANT - THIS OPERATION RETURNS THE SYSTEM BACK TO STATION 1.)

At the end of the QED transmission, key carriage return and type...save . The Computer will display on the CPT screen...SAVED .

Then type... end save. The Computer will display on the CPT screen ..

SAVED
READY

TO PRINTOFF THE INFORMATION THAT HAS BEEN TRANSMITTED type PRINTOFF and assigned text sequence (SYSB.Nkk.text - if PISCATAWAY, or SYSY.Nkk.text if NEW YORK) and key carriage return. The Computer will display an acknowledgement line on the CPT screen "DATA SET SYSB.Nkk COMPLETED" or "DATA SET SYSY.Nkk COMPLETED" and will print the contents of the transmitted data set at the Data Processing Center. This completes the PRINTOFF transaction. (READ CAREFULLY AND IF THERE IS AN ERROR MESSAGE, RE-ENTER PRINTOFF.) The Computer will then display on the CPT screen... READY

Type...
LOGOFF and key carriage return to get off the Computer.

TESTING FOR TRANSMISSION INTERFERENCE

There may develop spurious transmissions of Data Set information when standard (non-data) telephone lines are used for communication to the Computer Center.

To test for transmission line interference, immediately play back all the information that was a part of the suspect Data Set. If an error exists in the play-back information, cancel the Data Set, Logoff and contact Context, Inc., 215-386-7100 (F.Zigman or P.Bagley).

*(A continuous display of information on the last CPT screen line.)

TO PLAY BACK ALL THE INFORMATION FROM A SPECIFIC PREVIOUS TRANSMISSION

Begin in the same manner as for transmitting a new Data Set as follows:

Program CPT.

Call 212-683-6325 on the Modem Phone.

Type... TRETSO and key carriage return.

...after the Welcome signal,
Type...
LOGON E776/PASSWORD ACCT(*FKNY) (*CYNJ) or (*MPB1) and key carriage return.
Type...
QED (type in this space the Text or Data Set desired, omitting the words ...New Line(80), i.e., QED SYSY.Nkk.Text) and BEFORE key carriage return, you must set a line limit = Code "OUT" and note status line; type in number 66, or the number of lines that are on the page to be played back and key carriage return. This will eliminate the CPT screen from becoming full and locking up.* Press "OUT" key, back space once and type the number 0 . This will remove the system from Station 1. Type label test and key carriage return. Type L and key carriage return.

To display a particular line or lines, type L or the word List(space) give the line number or numbers as per the following example:

L 00010 99999 (or actual line numbers)

Note: The lines are listed by 10's .. type on CPT the range of lines desired always adding more lines than the lines that had been transmitted and key carriage return.

The Computer will respond and display the entire previously transmitted data set information.

When the test (or playback) is completed, Key Code "OUT" again and change line limit to 0 . Key carriage return. (VERY IMPORTANT - THIS OPERATION RETURNS THE SYSTEM BACK TO STATION 1.)

At the end of the QED transmission, key carriage return and type...save . The Computer will display on the CPT screen...SAVED .

Then type... end save. The Computer will display on the CPT screen ..

SAVED
READY

Type... LOGOFF and key carriage return to get off the Computer.

A specific previous transmission can be played back at any time prior to the execution of a command for an IEEE production run that included the specific transmission. Forty-eight (48) hours after the execution of an IEEE production run, all transmissions used in that production run go into the Data Base Archival System and are NOT AVAILABLE as a CPT display.

TO PLAY BACK THE DATA SET IDENTIFICATION FOR ALL TRANSMISSIONS THAT HAVE BEEN ENTERED INTO THE SYSTEM DATA BASE FROM A SPECIFIC IEEE EDUCATIONAL SERVICES LOCATION (NEW YORK, N.Y., OR PISCATAWAY, N.J.).

Begin in the same manner as for transmitting a new Data Set as follows:

Program CPT.

Call 212-683-6325 on the Modem Phone.

Type... TRETSO and key carriage return.
...after the Welcome signal,
Type...
LOGON E776/PASSWORD ACCT(*FKNY) (*CYNJ) or (*MPB1) and key carriage return.
The Computer will respond....READY

Before playback, you must set a line limit = Code "OUT" and note status line; type in number 66, or the number of lines that are on the page to be played back and key carriage return. This will eliminate the CPT screen from becoming full and locking up.* Press "OUT" key, back space once and type the number 0 . This will remove the system from Station 1. Type label test and key carriage return.

Type...LISTC(space)L(E776.SYSY) and key carriage return (from NEW YORK)
LISTC(space)L(E776.SYSB) and key carriage return (from PISCATAWAY)

The Computer will take a few minutes to respond.

This transaction will list the Data Set Identification for all transmissions that have been entered into the System Data Base from a specific IEEE Educational Services location. (THIS IS ONLY THE DATA SET IDENTIFICATION. THE INFORMATION THAT IS PART OF A DATA SET IS LIMITED TO BEING AVAILABLE ONLY FOR THE 48 HOURS AFTER THE EXECUTION OF AN IEEE PRODUCTION RUN THAT INCLUDED THE DATA SET INFORMATION.)

When the test (or playback) is completed, Key Code "OUT" again and change line limit to 0 . Key carriage return. (VERY IMPORTANT - THIS OPERATION RETURNS THE SYSTEM BACK TO STATION 1.)

At the end of the QED transmission, key carriage return and type...save . The Computer will display on the CPT screen...SAVED .

Then type... end save. The Computer will display on the CPT screen ..

SAVED
READY

Type... LOGOFF and key carriage return to get off the Computer.

All the Identified Data Sets that have been previously transmitted from a specific IEEE Educational Services location can be played back at any time prior to the execution of a command for an IEEE production run that included transmissions from the specific IEEE Educational Services location. Forty-eight (48) hours after the execution of an IEEE production run all transmissions used in that production run go into the Data Base Archival System and are NOT AVAILABLE as a CPT display.

CANCELLATION OF A TRANSMISSION

At the end of QED transmission, type... END (instead of SAVE) and key carriage return.

The Computer response will be ... Nothing Saved
Enter End or Save

Type... END again and key carriage return.

The Computer response will be ... READY

Type... LOGOFF and key carriage return.

(This will void the transmission just completed.)

TO DELETE A PARTICIPANT'S NON-MEMBER OR INCORRECT IEEE MEMBER NUMBER OR TWO PARTICIPANT NUMBERS FOR THE SAME PARTICIPANT RECORD

If a participant is in the Validation & Registry System with both an IEEE member number and a non-member number, or an incorrect number, a deletion transaction !pd of the incorrect or unwanted number must be exercised. Any course attendances that had been listed under the participant's incorrect number must be transferred to the participant's correct IEEE or non-member number, that will be in the Validation & Registry System Data Base. An !pi or !pc transaction with 99 in Field Code 0 (zero) should be used.

CAUTION - When transferring each course attendance to the participant's correct member or non-member number file, CHECK FOR ACCURACY THE:

.. Course Sponsor ID:
.. Course ID; Course Sequence Number, (if any).
  Make certain the IEEE course ID is the current nomenclature, i.e., old course ID: ETS3400, new ID: HS9012;
.. Course Title;
.. Course Short Title (if any);
.. Non-Degree Credits (if any);
.. Type of Units (if any);
.. Evaluation (if any).

CORRECTIONS TO A PARTICIPANT INFORMATION/COURSE ATTENDANCE RECORD (ADDITIONS OR DELETIONS)

If a participant information/course attendance record must be changed, then the incorrect participant's course attendances must be deleted !ad and then re-entered as new transactions !pc that include all participant information and all course attendances.

CAUTION - The System Format !pc transaction should be used for all additions or corrections for a participant record that is already in the Data Base.

SPONSOR/COURSE NUMBER ASSIGNMENTS

For an IEEE Entity as a Sponsor:

-- Identify the IEEE Sponsor using the 4-digit IEEE GEOCODE, IEEE Groups/Society Code, or N0010 for IEEE-EAB Sponsorship.

When the sponsor is a College or University:

-- Use the IEEE College/University Code number if available or generate an "N" number; however, first check the IEEE Validation & Registry System's alphabetized and numerical listings to determine if the sponsor is already in the Data Base. If not found, then assign the next "N" number.

For all other sponsors who would have an "N" number:

-- First check the IEEE Validation & Registry System's alphabetized and numerical listings to determine if the sponsor is already in the Data Base. If not found, then assign the next "N" number.

FOR THE COURSE NUMBER OF AN IEEE ENTITY COURSE OFFERING NOT EAB:

-- If no course number has been provided, identify the course using the IEEE's Group/Society 2-digit code and a sequence number. (IEEE-EAB-Sponsored courses will have numbers assigned by the IEEE Educational Services staff.)

For the course number of an IEEE EAB-Sponsored course:

-- HOME STUDY and VIDEOTAPE COURSES use the IEEE catalog number as the course number.

-- IEEE SHORT COURSES use the IEEE catalog number as the course number followed by a specific course sequence number.

For example.... Course #1005/376 Date Completed: 05 81
Title "____________________"

-- WHEN PROCESSED into the IEEE Validation & Registry System Course Attendance and Participant Information files, this will appear as...... Course ID: 1005
.. CRS-SEQ#: 376
Title "____________________" Completion Date: 81 05

For the course number of all other sponsors: (Non-IEEE Courses)

-- If no course number has been provided, identify the course using XX then, in caps, the first letter of each major word in the course title. For example..course title "Managing Stress and Change" will appear as..Course ID: XXMSC

CLASS - TIP CODES

All courses recorded in the IEEE Validation and Registry Sytstem will also be identified by IEEE's "Technical Interest Profile" categories.
For example....HS9013
DIGITAL TECHNIQUES ETS3200
TIP Code #1621

RECORD FORMAT FOR A COURSE CREDIT AWARD LABEL TITLE

The short form of the course title is found on an Output Listing "Award Label Titles"

The Record Format is 28 characters:

Positions 1 through 10 are the course ID.
Positions 11 through 28 are for the course short title.

(NOTE: Limit 18 characters/numbers for the course short title.)

Example: Course ID# E20
Understanding Microprocessors Through Software Design
should be entered as E20(7 spaces)UND MICRO S/W DES)
(28 characters in length)

INSTRUCTIONS FOR ENTERING A NEW COURSE CREDIT AWARD LABEL TITLE

Begin in the same manner as for transmitting a new Data Set.

After Logon (The following is a dialog between the CPT operator and the Data Processing Center.)

At the READY on the CPT screen ..

CPT Operator type: QED(space)IEEE.LABELS (carriage return)

CPT Screen reads: Dataset not line-numbered no-num assumed

CPT Operator type: (carriage return)

CPT Screen reads: INPUT (NVIP will not prompt you with a line number.) At this point, type the IEEE course ID code (leaving enough blanks after the ID to fill out the 10 spaces allowed for the course ID), then type the IEEE course short title (maximum 18 spaces). When adding the title is finished, proceed ..

CPT Operator type: (carriage return) This will get you out of the INPUT mode.

CPT Screen reads: QED

CPT Operator type: L (This will print out the file as it now stands.)

CPT Screen reads: (Lists the file.)

CPT Operator type: End save

CPT Screen reads: SAVED
READY

CPT Operator type: LOGOFF

SPECIAL LETTER-LOGIC REQUESTS

A letter appropriate to each specific INPUT transaction is generated through programmed letter-logic when the first or each additional course attendance record is entered into the IEEE Validation & Registry System.

A LETTER IS NOT GENERATED WHEN A CHANGE OR DELETION IS MADE TO A PARTICIPANT/COURSE ATTENDANCE RECORD.

To force the generation of a specific letter and bypass the System letter-logic, when entering either an addition, change or deletion to an existing record, designate the desired letter-logic using the 2-digit letter number in the special letter request Field Code 0 (zero) of the System format.

TO DISABLE THE PROGRAMMED LETTER-LOGIC and prevent ANY letter from being generated, specify 99 in the special letter request line field 0 of the System Format.

A participant transaction with 99 in Field Code 0 (zero) MUST NOT be in a Production Run that includes other transactions for the same participant number.

PARTICIPANT INFORMATION RECORDED PRIOR TO 1 DECEMBER 1981 in the manual IEEE CPT Format can be used to initiate course completions without re-recording in the System Format. However, to implement the transmission of this data, A SPECIAL LOGON SEQUENCE is required as follows:

```
QED IEEE.Nkk.text new
```

PRECAUTION

DO NOT TRANSMIT AN !cc TRANSACTION WITH ANY OTHER TRANSACTION FOR THE SAME PARTICIPANT NUMBER, i.e., the same transmission to the Data Processing Center. WAIT until the !pi, !pc, etc., information appears in the Editorial Lists. Then transmit the !cc completion entry transaction for the participant.

CRITERIA FOR ENTERING NON-IEEE-EAB SPONSORED COURSE ATTENDANCE AND PARTICIPANT INFORMATION INTO THE IEEE VALIDATION & REGISTRY DATA BASE

- IEEE Member or Non-Member Participant's Registration in and completion of an IEEE-EAB Sponsored Home Study, Short or Video Course will be automatically entered into the IEEE Validation & Registry Data Base.
- IEEE Member or Non-Member Participant's completion of an ABET Accredited Department Non-degree Credit Course will be entered into the IEEE Validation & Registry Data Base when the ABET Accredited Department arranges such a transaction with the Staff Director, IEEE Educational Services.
- All other requests for participation or entry into the IEEE Validation & Registry Data Base will be returned to the sender.

IEEE SUGGESTED CODE OF GOOD PRACTICE
for
CONTINUING EDUCATION NON-DEGREE CREDIT COURSE OFFERINGS

CONSIDERATIONS:

COURSES must have stated:

- Prerequisite
- Objectives/Materials Covered
- Instructor - Qualifications
  - Rules for Substitution

FEES must be clear with all options spelled out:

- What is included in the fee must be clear;
- Any extras must be stated;
- Notes/Texts/Other Materials Covered.

If there is a lab, is the fee all inclusive?

LOCATION for course must be stated and held there or equivalent -- any changes in location must be covered in proper timely notice.

COURSE SPONSOR must provide assurance of financial responsiblity including insurance.

- File original acceptance of the code with ABET or equivalent.
- Change in Policy requires new signature with ABET or equivalent.

CROSS INDEX OF FIELD AND FORMAT CODES

PARTICIPANT RECORD

NAME OF FIELD	SYSTEM FORMAT (1 character)	INTERNAL FORMAT (2-digit field codes)
Transaction Code		
Participant Number	a	Key 1
Participant Name	b	01
Participant Address	c	02
Optional Participant Address	d	03
Optional Participant Address	e	04
City, State, Zip	f	05
Participant Telephone Number	g	06
Home/Business	h	07
College/University Code	i	08
College/University	j	13
ABET Accreditation	k	09
Degree	l	10
Major	m	11
Year of Degree	n	12

NOTES FOR FILE TRANSACTION REPORT
D = Delete from File
U = Update of File
V = Verifies Completion of Non-Complete Course

CROSS INDEX OF FIELD AND FORMAT CODES

ATTENDANCE RECORD

NAME OF FIELD	SYSTEM FORMAT (1 character)	INTERNAL FORMAT (2-digit field codes)
Sponsor Code	p	18
Sponsor ABET Accredited	A	10
Course Sponsor	q	03
Course Coordinator/Instructor	r	27
Sponsor or Coord./Instr.Address	s	28
Opt.Spons.or Coord./Instr.Addr.	t	29
Opt.Spons.or Coord./Instr.Addr.	u	30
Spons.orCoord./Instr.City,State,Zip	v	31
Spons.orCoord./Instr.Telephone No.	w	34
Course ID Number	x	Key 3
Home Study	2	26
Course Completion Date	y	17 and Key 2
Course Title	z	19
Where Held- Organization	X	36
Where Held- Room	Y	37
Where Held- Street	Z	38
Where Held- City, State, Zip	1	20
Non-degree Credits	3	21
Type of Units	4	22
Classification Code	5	17
Confirmation	6	24
Payment	$	35
Evaluation	7	23
Participant Performance	8	25
Course Sequence Number	9	32
Special Letter Request	0	33

70

PARTICIPANT RECORD CHANGE FORMAT

Transaction Code		!pc		
Participant Ident.		a	_ _ _ _ _ _ _ REQUIRED	(7 ch.)
Participant Name		b	___:_______:_______:___ (Last)	(36 ch.)
Address-1	Codes	(c	___________	(32 ch.)
Address-2	re-	(d	___________	(32 ch.)
Address-3	quired	(e	___________	(32 ch.)
City, State, Zip		f	___________	(32 ch.)
Telephone		g	_ _ _ - _ _ _ - _ _ _ _ x _ _ _ _ _	(20 ch.)
Tel. No. Type		h	_ (b if business, h if home, u if unknown	(1ch.)

- -

ATTENDANCE RECORD CHANGE FORMAT

Transaction Code	!pc	Use !cc to report a course being completed.	
Participant Ident.	a	- - - - - - - REQUIRED	(7 ch.)
Course Ident.	x	- - - - - - - - - - REQUIRED	(10 ch.)
Course Completion Date	y	_ _ _ _ REQUIRED	(4 digits)
Course Squence Number	9	_ _ _ _ _	(5 ch.)
Sponsor ABET Accredited	A	_ _ _ ("yes" or blank)	(3 ch.)
Sponsor Code	p	___________	(10 ch.)
Course Title	z	___________ ___________	(60 ch.)
Sponsor Name	q	___________	(32 ch.)
Where Held-Organization	X	___________	(30 ch.)
Where Held-Room	Y	___________	(30 ch.)
Where Held-Street	Z	___________	(30 ch.)
City Where Held	1	___________	(20 ch.)
Course Units, No.	3	_ _._	(3 digits)
Course Units, Type	4	___________	(8 ch.)
Evaluation Codes	7	___________ ___________	(63 digits)
Confirmation Source Code	6	_ (c-Coord, s-Sponsor, i-IEEE, a-ABET	(1 digit)
Student Performance	8	___________	(6 ch.)
Home Study Indicator	2	_ (h if home study)	(1 ch.)
Coordinator Name	r	___________	(32 ch.)
Coordinator Telephone	w	___________	(23 ch.)
Coordinator Organization	s	___________	(32 ch.)
Coordinator Address-1	t	___________	(32 ch.)
Coordinator Address-2	u	___________	(32 ch.)
Coordinator City,State,Zip	v	___________	(32 ch.)
Special Letter Request	0	_ _	(2 digits)
Payment	$	___________	(35 ch.)

SPONSOR RECORD INSERT/CHANGE FORMAT

Transaction Code	!sc		
Sponsor Ident.	p	- - - - - - - - - - REQUIRED	(10 ch.)
Sponsor ABET Accredited	A	- - -	(3 ch.)
Sponsor Sort Name(Opt.)	a	*	(26 ch.)
Contact Name	r		(32 ch.)
Sponsor Name	q		(32 ch.)
Sponsor Address-1	t		(32 ch.)
Sponsor Address-2	u		(32 ch.)
Sponsor City,State,Zip	v		(32 ch.)
Telephone	w		(20 ch.)
Sponsor Short Name	b	*	(40 ch.)
Evaluation Inquiry Date	c	* (YYMMDD)	(6 digits)

* Internal Codes

COURSE DESCR. RECORD CHANGE FORMAT

Transaction Code	!sc		
Sponsor Ident.	p	- - - - - - - - - - REQUIRED	(10 ch.)
Course Ident.	x	- - - - - - - - - - REQUIRED	(10 ch.)
Course Title	z		(60 ch.)
Course Short Title	d	*	(40 ch.)
Course Title Rev. Date	e	* (YYMMDD)	(6 digits)
Home Study Indicator	2	(h if home study)	(1 ch.)
Classification Code	5		(6 ch.)
Evaluation Inquiry Date	f	* - - - - - (YYMMDD)	(6 digits)
Evaluator Name	g	*	(20 ch.)
Evaluation Date	h	* (YYMMDD)	(6 digits)
Evaluation Rating	i	*	(4 ch.)
Course Units, No.	3	- - - -	(3 digits)
Course Units, Type	4	- - -	(8 ch.)
Course Units Rev. Date	j	* (YYMMDD)	(6 digits)

* Internal Codes

RECORD FORMAT FOR RE-GENERATING A SPECIFIC INPUT TRANSACTION LETTER

!pc (transaction code)

a _ _ _ _ _ _ _ (7 ch.)(participant ident.)

x ____________(10 ch.)(course ident.)

y _ _ _ _ (4 ch.)(course completion date - MMYY)

0 _ _ (2 digits)(special letter request - 2-digit letter number)
(zero)

- -

RECORD FORMAT FOR ALL TRANSCRIPT REQUEST TRANSACTIONS

!tr (transaction code)

a _ _ _ _ _ _ _ (7 ch.)(participant ident.)

NOTE: MUST BE A SPECIFIC TRANSCRIPT REQUEST FROM THE PARTICIPANT. The Transcript will be sent to the participant's home or mailing address as listed in the IEEE Validation & Registry System.

- -

PARTICIPANT RECORD DELETE FORMAT

!pd (transaction code)
a _ _ _ _ _ _ _ (7 ch.)(participant ident.)

- -

ATTENDANCE RECORD DELETE FORMAT

!ad (transaction code)
a _ _ _ _ _ _ _ (7 ch.) (participant ident.)
x ____________(10 ch.) (course ident.)
y _ _ _ _ (4 ch.) (course completion date - MMYY)

- -

SPONSOR RECORD DELETE FORMAT

!sd (transaction code)
p ____________(10 ch.)(sponsor ident.)

- -

COURSE DESCRIPTION RECORD DELETE FORMAT

!cd (transaction code)
p ____________(10 ch.)(sponsor ident.)
x ____________(10 ch.)(course ident.)

RECORD FORMAT FOR CHANGE OR DELETION OF A PARTICIPANT'S FIRST ACADEMIC DEGREE INFORMATION

!pc (transaction code)
a _ _ _ _ _ _ _ (7 ch.)(participant ID#)
i _ _ _ _ _ _ _ _ (8 ch.)(college/university code)
j ____________________ (40 ch.)(name of college/university)
k _ _ _ (3 ch.)(ABET accreditation)
l _ _ _ _ _ _ (6 ch.)(degree)
m ____________________ (12 ch.)(major)
n _ _ (YY) (2 ch.)(year of degree)

NOTE: !pc for participant change
!pd for participant deletion

- -

RECORD FORMAT FOR COURSE CONFIRMATION TRANSACTIONS

!cl (transaction code) REQUIRED

a _ _ _ _ _ _ _ (7 ch.)(participant ident.) REQUIRED

x _ _ _ _ _ _ _ _ _ (10 ch.)(course ident.) REQUIRED

y _ _ _ _ (4 digits)(course completion date - MMYY) REQUIRED

p _ _ _ _ _ _ (6 ch.)(sponsor ident.) REQUIRED

A _ _ _ (3 ch.)(sponsor ABET accredited)

8 _ _ _ _ _ _ (6 ch.)(Code 8 is the participant performance.)

6 _ (1 ch.)(confirmation source code must appear in transaction):
"c" Confirmed by sponsor/coordinator/instructor.
"i" Confirmed by IEEE-EAB.
"a" Confirmed by an ABET accredited department.

q ____________________ (32 ch.)(sponsor name) *

z ____________________ (10 ch.)(course title) *

3 _ _ _ (3 digits)(non-degree credits) *

4 ________ (8 ch.)(type of units) *

* Automatically added to Sponsor/Course File.

COMPLETE DESCRIPTION OF ALL SYSTEM MAILINGS

RESPONSE TO FIRST REPORT OF IEEE-EAB-SPONSORED COURSE EARNING CEAUs:

- *Letter CE:01
- *Award Label
- Certificate of Educational Achievement
- *Transcript CE:09
- Participant Information Form - Blank
- Validation Program Description

RESPONSE TO ADDITIONAL REPORT OF IEEE-EAB-SPONSORED COURSE EARNING CEAUs; NO NEW CERTIFICATE OF EDUCATIONAL ACHIEVEMENT NEEDED:

- *Letter CE:02
- *Award Label
- *Transcript CE:09
- Participant Information Form - Blank
- Validation Program Description

RESPONSE TO ADDITIONAL REPORT OF IEEE-EAB-SPONSORED COURSE EARNING CEAUs; NEW CERTIFICATE OF EDUCATIONAL ACHIEVEMENT NEEDED:

- *Letter CE:03
- *Award Label
- Certificate of Educational Achievement
- *Transcript CE:09
- Participant Information Form - Blank
- Validation Program Description

RESPONSE OF REPORT OF IEEE-EAB-SPONSORED COURSE NOT EARNING CEAUs:

- *Letter CE:04
- Certificate of Merit
- *Transcript CE:09
- Participant Information Form - Blank
- Validation Program Description

RESPONSE TO REPORT OF NON-IEEE COURSE WITH CREDITS, NO CERTIFICATE, NO AWARD LABEL:

- *Letter CE:05
- *Transcript
- Participant Information Form - Blank
- Validation Program Description

RESPONSE TO REPORT OF IEEE NON-EAB COURSE, NO CERTIFICATE, NO AWARD LABEL:

- *Letter CE:12
- *Transcript CE:09
- Participant Information Form - Blank
- Validation Program Description

RESPONSE TO INTENTION TO PARTICIPATE, WITHOUT REPORT OF ATTENDANCE:

- *Letter CE:06
- *Sample Transcript (Letter CE:13)
- Participant Information Form - Blank
- Validation Program Description

REQUEST TO COURSE SPONSOR/COORDINATOR FOR CONFIRMATION OF ATTENDANCE:

- *Letter CE:07
- Validation Program Description

SOLICITATION TO COURSE SPONSOR/COORDINATOR FOR IEEE REVIEW OF COURSE (TEMPORARILY DISCONTINUED):

- *Letter CE:08
- Validation Program Description

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*Starred items are system-generated; remaining items are supplied by IEEE Educational Services.

DESCRIPTION OF MAILINGS (Continued)

COURSE SPONSOR SOLICITATION:
*Letter CE:10 Validation Program Description
Sponsor/Course Information Form - Blank

PARTICIPANT SOLICITATION:
*Letter CE:11 Validation Program Description
Participant Information Form - Blank

ANNOUNCEMENT TO PARTICIPANTS THAT RECORDS HAVE BEEN TRANSFERRED TO THE IEEE SYSTEM OR RESPONSE TO REQUEST FOR TRANSCRIPT:
*Letter CE:14 Validation Program Description
Participant Information Form - Blank

SHORT COURSE REGISTRATION REPLY - NOT PAID:
*Letter CE:15 Validation Program Description
Participant Information Form - Blank

SHORT COURSE REGISTRATION REPLY - ADVANCED PAYMENT/PURCHASE ORDER:
*Letter CE:16 Validation Program Description
Participant Information Form - Blank

HOME STUDY COURSE REGISTRATION REPLY - ADVANCED PAYMENT/PURCHASE ORDER (EXCEPT HOME STUDY HS9001 TECHNICALLY WRITE!):
*Letter CE:17 Validation Program Description
Participant Information Form - Blank

HOME STUDY COURSE REGISTRATION REPLY - ADVANCED PAYMENT/PURCHASE ORDER FOR HOME STUDY HS9001 TECHNICALLY WRITE! ONLY:
*Letter CE:18 Validation Program Description
Participant Information Form - Blank

HOME STUDY COURSE HS9001 TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT - (U.S. and CANADA):
*Letter CE:19 Validation Program Description
Participant Information Form - Blank
Instructor's Biography

HOME STUDY COURSE HS9C01
TECHNICALLY WRITE! INSTRUCTOR'S ASSIGNMENT for FOREIGN STUDENTS ONLY - (Canada NOT included):
*Letter CE:20 Validation Program Description
Participant Information Form - Blank
Instructor's Biography

HOME STUDY COURSE INSTRUCTOR PACKET TRANSMITTAL LETTER.
*Letter CE:21 Validation Program Description
Participant Information Form - Blank
For Domestic Address)
*Letter CE:19)
- or -) Selected Instructor Material.
For Foreign Address)
*Letter CE:20)

---

* Starred items are system-generated; remaining items are supplied by IEEE Educational Services.

SYSTEM REFERENCES

COMPLETE SYSTEM FORMAT

FIELD TITLE	FIELD CODE & (# CH)
Transaction Code	(See list of transaction codes.)
Participant Number	a .. (7 ch.)
Participant Name	b .. (36 ch.)
Participant Address	c .. (32 ch.)
Optional Participant Address	d .. (32 ch.)
Optional Participant Address	e .. (32 ch.)
City, State, Zip	f .. (32 ch.)
Participant Telephone Number	g .. (20 ch.)
Home/Business	h .. (1 ch.)
College/University Code	i .. (8 ch.)
College/University	j .. (40 ch.)
ABET Accreditation	k .. (3 ch.)
Degree	l .. (6 ch.)
Major	m .. (12 ch.)
Year of Degree	n .. (2 ch.)
Sponsor Code	p .. (10 ch.)
Sponsor ABET Accredited	A .. (3 ch.)
Course Sponsor	q .. (32 ch.)
Course Coordinator/Instructor	r .. (32 ch.)
Sponsor or Coord./Instr.Address	s .. (32 ch.)
Opt. Sponsor or Coord./Instr.Address	t .. (32 ch.)
Opt. Sponsor or Coord./Instr.Address	u .. (32 ch.)
Sponsor or Coord./Instr. City, State, Zip	v .. (32 ch.)
Sponsor or Coord./Instr. Telephone Number	w .. (23 ch.)
Course ID Number	x .. (10 ch.)
Home Study	2 .. (1 ch.)
Course Completion Date (MMYY)	y .. (4 ch.)
Course Title	z .. (60 ch.)
Where Held- Organization	X .. (30 ch.)
Where Held- Room	Y .. (30 ch.)
Where Held- Street	Z .. (30 ch.)
Where Held- City, State, Zip	1 .. (20 ch.)
Non-degree Credits	3 .. (3 digits)
Type of Units	4 .. (8 ch.)
Classification Code	5 .. (6 ch.)
Confirmation	6 .. (1 ch.)
Payment	$ .. (35 ch.)
Evaluation	7 .. (63 di.)
Participant Performance	8 .. (6 ch.)
Course Sequence Number	9 .. (5 ch.)
Special Letter Request	0 .. (2 digits) (zero)

IEEE NON-EAB TRANSACTION - NO CERTIFICATE - NO AWARD LABEL

0026

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. Attila Takach
405 De Soto Drive
Los Gatos, CA 95030

Your Participant No. 7434202

Dear Mr. Takach:

This is to acknowledge receipt of a report of your having completed the following course:

Sponsor Name:	IEEE Computer Society
Course Number:	XXDFSP
Course Name:	Digital Filter & Signal Processing
Completion Date:	02-80

Enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

CE:12

85

3-01-82

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant:
Mr. Attila Takach
405 De Soto Drive
Los Gatos, CA 95030

Transcript Date: 17 December 1981

Participant Number: 7434202

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
XXDFSP	** Digital Filter & Signal Processing IEEE Computer Society	02-80	2.1 CEU

**COURSE ATTENDANCE AND CREDITS NOT CONFIRMED

Transcript prepared under
the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type: 2.1 CEU

CE:09

NON-IEEE TRANSACTION

0003

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Mr. David W. Roop
8310 Holt Drive
Richmond, VA 23228

Your Participant No. 6793038

Dear Mr. Roop:

This is to acknowledge receipt of a report of your having completed the following course:

Sponsor Name:	West End College
Course Number:	XXESPC
Course Name:	Elec. System Protection & Coord.
Completion Date:	04-79
Non-Degree Credits:	0.7 CEU

Enclosed is a transcript which shows your continuing education record for the period 1 January 1979 to date.

For your convenience in reporting your next course attendance, we enclose a blank Course Attendance and Participant Information Form. It will help us if you will include your participant number, shown above, on your future Information Forms and on all correspondence.

Congratulations on your achievement. We hope that you will find it rewarding to continue your professional education.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

CE:05

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THE INSTITUTE OF
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ENGINEERS, INC.

TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Participant:
Mr. David W. Roop
8310 Holt Drive
Richmond, VA 23228

Transcript Date: 17 December 1981

Participant Number: 6793038

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
XXE3PC	** Elec. System Protection & Coord.	04-79	0.7 CEU
1111	Fund. of Systems Grounding and Prote IEEE-E.A.B.	05-80	1.8 CEAU

**COURSE ATTENDANCE AND CREDITS NOT CONFIRMED

Transcript prepared under
the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

Totals by Type:

1.8 CEAU
0.7 CEU

CE:09

83

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445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

NON-IEEE TRANSACTION CONFIRMATION REQUEST

0005

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

University of California
Coord. of Continuing Engrg. Ed.
Lawrence Livermore National Lab.
P.O. Box L-539
Livermore, CA 94550

Dear Course Sponsor/Coordinator/Instructor:

This is to request confirmation of the following participant at the course described below:

Participant: Mr. William B. Darmitzel
5651 El Camino Del Cerro
Tucson, AZ 85705

Sponsor ABET Accred.:
Course Number: 1067
Course Name: GRNDG & LIGHT PROT
Where Held: Tucson, AZ
Completion Date: 04-81
Non-Degree Credits: 1.2 CEU

Please make any necessary corrections and indicate in the space provided below the participant's performance: pass, fail, letter or numerical grade. Add your signature, date, and return this letter in the accompanying reply envelope.

Thank you for your cooperation in helping to maintain the continuing education record of this participant.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

Participant's performance: ______________
Confirmed by: ______________________
Date: ______________________________

!cl 6816029

CE:07

345 EAST 47TH STREET • NEW YORK, NEW YORK 10017 • (212) 644-7860
445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

TRANSCRIPT OF CONTINUING EDUCATION COURSES
FOR THE PERIOD BEGINNING 1 January 1979

Transcript Date: 17 December 1981

Participant:
Mr. William B. Darmitzel
5651 El Camino Del Cerro
Tucson, AZ 85705

Participant Number: 6816029

Course Number	Course Title Sponsor	Completion Date	Non-Degree Credits
1067	** GRNDG & LIGHT PROT Univ. of California	04-81	1.2 CEU

**COURSE ATTENDANCE AND CREDITS NOT CONFIRMED

Totals by Type: 1.2 CEU

Transcript prepared under
the supervision of:
John F. Wilhelm,
Staff Director,
Educational Services

CE:09

PARTICIPANT SOLICITATION

0007

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

5 January 1982

Mr. Joseph E. Casey
P. O. Box 546
Bryn Mawr, PA 19010

Dear EE:

IEEE invites you to participate in a voluntary, computer-based, record-keeping system for Validating the Technical Continuing Education Achievement of Engineers. Enclosed is a description of this new program.

This system will:

- RECORD the non-degree credits and your evaluation, via questionaire, for each continuing education course that you have completed after January 1, 1979.
- CONFIRM your course completion and performance with each sponsor of a continuing education course that you have requested be entered into the validation program.
- ACKNOWLEDGE each continuing education completion that has been added to your computer-based record by promptly returning to you an updated transcript of your file.

To initiate your participation or intention to enter this IEEE voluntary validation program:

- COMPLETE the Continuing Education Course Attendance/Participation Information Form that is enclosed with this letter. A separate form should be submitted for each course completion to be entered into the system. Additional forms are availiable upon request. If you intend to participate in the IEEE Validation Program, but do not have a continuing education completion to record, write NONE in the Course Attendance portion of the enclosed form.
- RETURN the completed Continuing Education Course Attendance and Participation Information Form in the enclosed self-addressed envelope.

Very truly yours,

91

John F. Wilhelm
Staff Director, Educational Services
Encls.

CE:11

3-01-82

345 EAST 47TH STREET ▪ NEW YORK, NEW YORK 10017 ▪ (212) 644-7860
445 HOES LANE ▪ PISCATAWAY, NEW JERSEY 08854 ▪ (201) 981-0060

COURSE SPONSOR/COORDINATOR/INSTRUCTOR SOLICITATION

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

17 December 1981

Boeing Company
Att.: Mr. P. J. Beasley
M/S 87-84
P.O. Box 3707
Seattle, WA 98124

Dear Course Sponsor/Coordinator/Instructor:

IEEE invites you to participate in a voluntary, computer-based; record-keeping system for Validating the Technical Continuing Education Achievement of Engineers.

The purpose of the IFEE validation program is to motivate practicing electrical/electronics engineers to pursue quality continuing education from any responsible sponsor. Enclosed is a description of this new program.

To initiate an IEEE Educational Activities Board (EAB) review of your courses, PLEASE:

- COMPLETE the enclosed questionnaire for each course to be reviewed. Courses taken as part of an awarded degree will not be considered as a part of the validation program.
- INCLUDE appropriate descriptions of course goals, activities, materials and representative tests of participant's attainments. RETURN in the enclosed reply envelope.

When accepted, the course will be assigned Continuing Education Achievement Units (CEAUs) by IEEE's Educational Activities Board (EAB). The term CEAU is defined as ten contact hours of acceptable participation in an organized continuing education experience taken under responsible sponsorship, capable direction, qualified instruction and an examination testing the learning accomplishment.

Very truly yours,

John F. Wilhelm
Staff Director, Educational Services

Encls.

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445 HOES LANE • PISCATAWAY, NEW JERSEY 08854 • (201) 981-0060

SOLICITATION TO SPONSOR/COORDINATOR/INSTRUCTOR FOR IEEE-EAB COURSE REVIEW

THE INSTITUTE OF
ELECTRICAL AND
ELECTRONICS
ENGINEERS, INC.

20 January 1980

Department of Electrical Engineering
Att.: Dr. Raymond K. Jones
Moore School
University of Pennsylvania
Philadelphia, PA 19104

Dear Course Sponsor /Coordinator:

This is to call your attention to the fact that an IEEE validation program participant has attended the following course sponsored by your organization.

Course Number:	CS200
Course Name:	Switching Circuits
Where Held:	Philadelphia, PA
Completion Date:	01-12-80
Non-Degree Credits:	3.0 PDH

For attendees of this course to accumulate Continuing Education Achievement Units (CEAUs) on their IEEE Validation Program transcripts, we suggest you invite an IEEE Educational Activities Board (EAB) review of this course. The term CEAU is defined as ten contact hours of acceptable participation in an organized continuing education experience taken under responsible sponsorship, capable direction, qualified instruction and an examination testing the learning accomplishment. Enclosed is a description of this new IEEE program.

To initiate an IEEE EAB review, PLEASE:

- COMPLETE the enclosed questionnaire for each course to be reviewed. Courses taken as part of an awarded degree will not be considered as a part of the validation program.

- INCLUDE appropriate descriptions of course goals, activities, materials and representative tests of participant's attainments. RETURN in the enclosed reply envelope.

Sincerely,

John Wilhelm

John F. Wilhelm
Staff Director,
Educational Services

Encls.

3-01-82

CE:08

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS

Purpose

The basic purpose of the IEEE validation program is to motivate persons practicing electrical and electronics engineering to pursue quality technical continuing education courses offered by any responsible sponsor.

Quality

The quality of each sponsor's courses is assured through two levels of evaluation: peer evaluation by the appropriate Group or Society of the IEEE Technical Activities Board, and course participant evaluation upon completion of each continuing education achievement. In addition, each course participant's learning accomplishment must be evaluated by the course sponsor.

Recognition

Recognition of acceptable participant performance in an IEEE evaluated and accepted course is given by granting IEEE Continuing Education Achievement Units (CEAU's). Courses not evaluated or accepted by IEEE will be recognized with the sponsor's credit units.

The IEEE Validation program also provides additional recognition by maintaining a permanent continuing education record for each participant in the "Validation of the Education Achievement of Engineers" program.

All program participants may request transcripts of their continuing education record.

Motivation

Many practitioners need the information available in senior college elective technical courses, but they do not receive recognition for acceptable performance unless they are seeking an advanced degree.

This program has been initiated to provide:

- IEEE recognition of acceptable participant performance in an IEEE evaluated and accepted course.
- IEEE recognition of quality courses within the scope of the Institute's technical expertise.
- An up-to-date transcript of each participant's completed continuing education courses from any responsible sponsor using any educational media.
- An aid to Career Planning.

Participation

The IEEE Validation program is available to practitioners and responsible sponsors of technical continuing education courses.

Courses from ABET (ECPD) accredited curricula will be accepted into the program without an initial evaluation by the appropriate Group or Society of the IEEE Technical Activities Board.

Additional Information

This voluntary computer-based registry for technical continuing education non-degree credits is presently available at no charge to practitioners. This new service is made possible through a two-year NSF Grant No. SED-7918989 that has been awarded to the IEEE Educational Activities Board. The purpose is to develop a model system that will validate practicing engineers' achievement in electrical and electronics continuing education courses.

Project Director Roy H. Mattson	Project Manager Joseph E. Casey

IEEE Staff Director
John F. Wilhelm

Plan Now:

To be a part of
this program as a
- Practitioner
or
- Course Sponsor

Write To:
"Validation of the Continuing Education Achievement of Engineers"
NSF Project Grant No. SED-7918989
Post Office Box 453
Piscataway, New Jersey 08854

(THIS IS A PHOTOCOPY OF THE NSF SYSTEM INFORMATION LEAFLET)

IEEE NSF HARD COPY INPUT FORM

CONTINUING EDUCATION COURSE ATTENDANCE AND PARTICIPANT INFORMATION FORM

Please enter this information into the "Validation of the Continuing Education Achievement of Engineers Project."

IMPORTANT: Please print or type.

FIELD CODE

PARTICIPANT INFORMATION

a IEEE MEMBER NO. ______ IEEE MEMBER (Check one) YES ☐ NO ☐

b NAME ______ (Mr./Mrs., etc.) First Middle Initial Last (Jr., Ph.D., etc.)

c ADDRESS ______

d ______

e ______

f ______ City State Zip Code

g TELEPHONE NO. ___-___-___ h Ext. ______ Business ☐ Home ☐ (Check one)

FIRST ACADEMIC DEGREE INFORMATION

i For IEEE use only. ▨▨▨▨▨▨▨▨▨▨

j COLLEGE/UNIV. ______ CAMPUS

k ABET ACCREDITATION (ECPD) YES ☐ (Check one) NO ☐

l FIRST DEGREE ______ (Abbreviation) m MAJOR ______ (Abbreviation) n YEAR OF DEGREE 19__

COURSE ATTENDANCE

p For IEEE use only. ▨▨▨▨▨▨▨▨▨▨

q COURSE SPONSOR ______ (Institution Name or IEEE entity)

r Course Coordinator/Instructor ______ First Middle Initial Last

s ADDRESS ______

t ______

u ______

v ______ City State Zip Code

w TELEPHONE NO. ___-___-___ Ext. ______

x COURSE NUMBER ______ y DATE COMPLETED ___ Mo. ___ Yr.

z COURSE TITLE ______

1 WHERE HELD ______ City (Blank if Home Study) ___ State 2 Home Study YES or NO ☐ ☐

3 NON DEGREE CREDITS ___.__ 4 TYPE OF UNIT ______ (CEU, HRS., CEAU, etc.)

5 For IEEE use only. ▨▨▨▨▨▨▨▨▨▨ 6 90

7 (over) **PLEASE COMPLETE THE COURSE EVALUATION QUESTIONNAIRE ON THE BACK OF THIS FORM**

COURSE EVALUATION QUESTIONAIRE

MARKING INSTRUCTIONS
AS - If you **agree strongly** with the item
A - If you **agree** moderately with the item
D - If you **disagree** moderately with the item
DS - If you **disagree strongly** with the item

PLEASE respond to each statement.

NOTE: WHEN ENTERING COURSE EVALUATION IN FIELD CODE 7, USE VALUES: 4 for AS, 3 for A, 2 for D, 1 for DS.

EXAMPLE........ (4) (3) (2) (1)

1. It was a very worthwhile course. AS__ A__ D__ DS__
2. I would take another course that was taught this way. AS__ A__ D__ DS__
3. The course material was present in logical content units. AS__ A__ D__ DS__
4. The course material was too difficult. AS__ A__ D__ DS__
5. The course content was appropriate to the aims and objectives of the course. AS__ A__ D__ DS__
6. The course was quite interesting. AS__ A__ D__ DS__
7. It was not clear why certain things were being taught. AS__ A__ D__ DS__
8. NOT much was gained by taking this course. AS__ A__ D__ DS__
9. I would have preferred another method of teaching this course. AS__ A__ D__ DS__
10. Course concepts were related in a systematic manner. AS__ A__ D__ DS__
11. The course material seemed worthwhile. AS__ A__ D__ DS__
12. The course was quite boring. AS__ A__ D__ DS__
13. I have learned basic information in this course which I will be able to relate to other situations. AS__ A__ D__ DS__
14. Overall the course was quite good. AS__ A__ D__ DS__
15. I learn more when other teaching methods are used. AS__ A__ D__ DS__
16. For the time allotted, topic coverage was exhaustive. AS__ A__ D__ DS__
17. Some things were NOT explained very well. AS__ A__ D__ DS__
18. I now feel able to communicate course material to others. AS__ A__ D__ DS__
19. I have become more confident in this area because of this course. AS__ A__ D__ DS__
20. The course was well organized. AS__ A__ D__ DS__
21. I think that the course was taught quite well. AS__ A__ D__ DS__
22. The course content was excellent. AS__ A__ D__ DS__
23. Too much material was covered in this course. AS__ A__ D__ DS__
24. The course was helpful in developing new skills. AS__ A__ D__ DS__
25. I developed an ability to evaluate work in this field. AS__ A__ D__ DS__

The Family Educational Rights and Privacy Act of 1974, effective January 1, 1975 provides for the release of Course Attendance and Participant Performance Information only upon receipt by the course sponsor of a written consent by the individual concerned.

"I consent to the release of my Course Attendance and Performance Information to the IEEE Validation of the Continuing Education Achievement of Engineers Project."

Participant's Signature ______________________ Date 97

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
NSF PROJECT GRANT NO. SED-7918939
POST OFFICE BOX 453, PISCATAWAY, NEW JERSEY 08854

IEEE NSF HARD COPY INPUT FORM

CONTINUING EDUCATION COURSE SPONSOR INFORMATION FORM

Please enter this information into the "Validation of the
Continuing Education Achievement of Engineers Project."

IMPORTANT: Please print or type.

COURSE INFORMATION

COURSE SPONSOR ______________________________
(Institution Name or IEEE entity)

COURSE COORDINATOR First / Middle Initial / Last

ADDRESS

City / State / Zip Code

TELEPHONE NO. ___ - ___ - ___ Ext. ______

COURSE NUMBER ______ **DATE COMPLETED** ___ Mo. ___ Yr.

COURSE TITLE ______________________________

NON DEGREE CREDITS ___ . _ **TYPE OF UNIT** ______
(CEU, Hrs., CEAU, etc.)

COURSE GOALS ______________________________

COURSE ACTIVITIES ______________________________

COURSE MATERIALS ______________________________

METHOD OF EVALUATING STUDENT PERFORMANCE ______________________________

Signature of Sponsor's Representative ______________________________

Date ______________________________

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
NSF PROJECT GRANT NO. SED-7918989
POST OFFICE BOX 453, PISCATAWAY, NEW JERSEY 08854

TO INITIATE AN IEEE SELECTIVE LABEL PRODUCTION RUN FROM IEEE EDUCATIONAL SERVICES, NEW YORK, N.Y., OR PISCATAWAY, N.J.

Begin in the same manner as for transmitting a new Data Set.

```
CPT Operator type: TRETSO

CPT Screen reads:  WELCOME TO NVIP
                   PLEASE SIGN ON
CPT Operator type: LOGON E776/PASSWORD NON ACCT(*PROD)

CPT Screen reads:  ICH70001I E776    LAST ACCESS AT 14:19:01 on 82.077 #
                   E776 LOGON IN PROGRESS AT 14:20:11 ON MARCH 18, 1982 #
                   NO BROADCAST MESSAGES
                   ***** IEEE CONTINUING EDUCATION REGISTRY SYSTEM *****
                   READY                             Note: # This is time/date of last
CPT Operator type: LABELS                                    or present Product Run.

CPT Screen reads:  ** IEEE SELECTIVE LABEL PRODUCTION **
                   ENTER YOUR SECURITY CODE:..  ..CPT Operator type: FEK for IEEE
                                                  EDUCATIONAL SERVICES, New York, N.Y.
                                                  - or - MPB for IEEE EDUCATIONAL
                                                  SERVICES, Piscataway, N.J.

CPT Screen reads:  ** ACCESS GRANTED, CONTINUE WITH PROCESSING **
                   INCLUDE NON-MEMBER, MEMBER, OR BOTH (N, OR M, OR B)?M
NOTE:              INCLUDE OR EXCLUDE LABEL ON COURSE-ID (I OR X)?X
  CPT Operator     INCLUDE FOREIGN ADDRESSES (Y OR N)?N
  types the last   INCLUDE OR EXCLUDE ON ZIP-CODE PREFIX (I OR X)?I
  character(s)     ENTER LOWEST 3 DIGIT ZIP-CODE PREFIX OR THE WORD 'ALL':191
  on each selec-   ENTER UPPER 3 DIGIT ZIP-CODE PREFIX OR 'RETURN':191 .. NOTE: An example
  tion line.       ENTER MAIL/LABEL CODE (UP TO 10 CHARS.):AQ9              of a single ZIP.
                   ENTER 1ST COURSE ID-NUMBER TO BE SELECTED (UP TO 10 CHARS.):HS9012
                   ENTER 2ND COURSE ID-NUMBER OR ALTERNATE 1ST COURSE ID-NUMBER TO
                   BE SELECTED (OR 'RETURN' IF NO 2ND OR 3RD COURSE IS DESIRED):ETS3400
                   ENTER 3RD COURSE ID-NUMBER OR 'RETURN': ..NOTE:'RETURN'= Carriage Return.
                   INCLUDE COURSE COMPLETION (Y OR N)?:Y
                   ENTER 4-DIGIT COURSE COMPLETION DATE:8101  (YYMM)
                   SELECTION CRITERIA HAVE BEEN RECORDED
                   CONTINUE OR ABORT JOB (C OR A)?C .. NOTE: Enter A to cancel Production.
                   ENTER NUMBER OF COPIES OF LABELS:1
                   INITIAL LABEL PROCESSING HAS BEGUN
                   PLEASE WAIT A FEW MOMENTS
                   JOB SUBMITTED FOR EXECUTION
                   LABEL PROCESSING COMPLETE .. NOTE: For Label Count, wait one hour;
                   READY                             then call Context, Inc., 215-386-7100
CPT Operator type: LOGOFF                            (F.Zigman or P.Bagley)

CPT Screen reads:  E776 LOGGED OFF TSO AT 14:23:12 ON MARCH 18,1982 #
                   LAST STEP COMPLETION CODE WAS USER  000
```

This procedure will implement an "as selected" Production of Plain Cheshire Labels-° 4 across from the names and addresses that have been previously recorded in the IEEE Validation & Registry System. The Data Processing Center will deliver the IEEE Selective Label Product to FEK-IEEE Educational Services, New York, N.Y., or MPB-IEEE Educational Services, Piscataway, N.J., as entered in the Security Code.

°To designate other paper types, call Context,Inc., 215-386-7100 (F.Zigman or P.Bagley) before initiating the Selective Label Product Run.

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FINAL REPORT

NSF Grant No. SED 7918989

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS

Submitted by

Dr. Roy H. Mattson
Project Director

I INTRODUCTION

Funds granted by the National Science Foundation (SED 7918989) to the Institute of Electrical and Electronic Engineers (IEEE) were to be used for the purposes stated in the grant document dated September 11, 1979.

"The Institute for Electrical and Electronics Engineers (IEEE) proposes to design, develop and disseminate a model system for validating educational achievement in the area of the continuing education of engineers.

This system, which would be applicable to any continuing education system, will consist of the following steps; 1) Any institution may submit a course evaluation package to the IEEE Technical Advisory Board for review by professional engineers; 2) If accepted, the course will be assigned Continuing Education Achievement Units (CEAUs); 3) Any interested electrical engineer (EE) may inform the IEEE of his or her intent to participate in the program and be entered into a computer-based record keeping system; 4) The participating EE will then take an acceptable course and his or her learning accomplishment will be evaluated by the course instructor; 5) The results will be transmitted to the IEEE for recording; 6) The participating EE will evaluate each course, upon completion, for quality and usefulness and inform the IEEE, and 7) The IEEE will send to the participant a dated coupon upon successful course completion indicating the number of CEAUs earned.

After earning a specified number of CEAUs, the engineer will receive a Certificate of Achievement. The long range goal of the project will be to base these Certificates on the actual attainment of engineering competencies and examine the extent to which this type of a system might be compatible with the goals of various bodies currently involved with the recertification of engineers."

The program, essentially items 1 through 7, is now functioning as explained in detail below.

Item 1. This portion of the program still needs more development effort. The IEEE was willing to accept course evaluation packages from any continuing education course sponsor to determine the acceptability of the course for CEAU credit. An unexpected problem developed in that the number of requests exceeded the processing ability of the IEEE. Presently a different system is being developed which will accredit course sponsors rather than individual courses. This system should be functioning by 1983.

Items 2 through 7 are all in place and functioning well. The IEEE is still working on the development of sequences of courses appropriate to serve the critical manpower needs of the nation.

Other technical Societies, especially the American Society of Mechanical Engineers, are studying the Validation Program with the thought of using it to serve the needs of their members. The Accrediting Board for Engineering and Technology is cooperating with the IEEE in developing the course sponsor accreditation system. Thus, the Validation Program is expanding beyond the IEEE initiation effort.

The registry system now has of 5,000 participants reporting over 10,000 course participations. The results of a mail survey of participants demonstrate that they believe the Program is such a worthy project that they are willing to pay for the service. The IEEE is continuing the program with a $3. fee associated with each participation. Thus, the IEEE and the Project Director consider the program a success.

II PROGRAM MOTIVATION AND BACKGROUND

The engineering profession and its practitioners face numerous problems in the area of continuing education (C.E.). These include: 1) motivating practictioners to pursue C.E. opportunities, 2) evaluating and improving the quality of C.E. offerings, 3) providing career guidance to practitioners, 4) avoiding obsolescence via C.E. courses, 5) providing participants with records of their C.E. activities, 6) providing Iowa registered engineers with documented C.E. information so they can meet mandatory C.E. requirements needed yearly for relicensing, 7) meeting the anticipated crisis in high technology engineering manpower, and 8) bringing the technical competences of appropriate technical societies into the C.E. picture to evaluate and improve C.E. courses.

The Validation Program is an innovative and effective solution to these problems which uses existing organizations instead of establishing new ones. It has been suggested by some that a new government agency be formed to evaluate and accredit C.E. courses and course sponsors, or that a large government funded national engineering university be created to grant master's degrees for C.E. activities. However, the Institute of Electrical and Electronic Engineers (IEEE) Validation of Educational Achievement Program addressed the problems by: 1) providing practitioners with a record of their achievements and certificates for acceptable performance, 2) having peer evaluation of C.E. course offerings and then allowing the acceptable high quality courses to grant Continuing Education Achievement Units (CEAUs) to those who pass the course and its instructor administered examination, 3) identifying and developing appropriate sequences of C.E. courses to allow practitioners to move into new high demand technical areas, 4) assuring high quality and appropriate material in C.E. courses not only through peer evaluation, but also through student evaluation of the courses, 5) having a computer based registry system operated by the technical society to record C.E. participation, 6) providing participants with their records, 7) providing a documented mechanism of access to appropriate C.E. courses for a talented person, with any type of preparation, so that he or she can develop needed skills, and 8) using the Technical Activities Board of the IEEE as a source of peer level course reviewers.

The Institute of Electrical and Electronics Engineers is a 200,000 member international technical society organized to serve the needs of its members. About 145,000 of these members are in the United States. One of the most important services of the IEEE is technical education, and an important part of technical education is continuing education.

The IEEE wants to keep its members current technically and to help them pursue planned career development. Many individual Institute members believe these goals can be partially attained through continuing education; however, IEEE members often underutilize continuing education opportunities for a number of reasons. These include: no discernable reward for their efforts; no assurance that continuing education course is current and of high quality; and no assurance that a course fits into a pattern leading to a desired career development goal.

Studies have shown that electrical engineers in practice tend to become less productive after their mid-thirties. This phenomenon has been related to technical obsolescence. Continuing education provides a possible means of retaining a high level of productivity on the part of IEEE members.

Because of these and related problems, in 1972 the Education Activities Board of the IEEE established an Ad Hoc Committee to study the situation and make recommendations concerning appropriate actions. One of their actions was the 1973 formation of the IEEE Committee on the Validation of Educational Achievement, with Dr. Mattson as chairman.

In addition to the above considerations, there are a number of national pressures and needs affecting practicing electrical engineers which may force them to pursue continuing education. For example, there are pressures from consumer groups regarding exemption clauses resulting in legislation concerning professional registration and the legal liability of practicing engineers. It appears that all electrical engineers may some day have to be registered professional engineers --- regardless of their employment --- since they may be legally responsible for their engineering designs. A validated continuing education program will be needed to verify a continuous updating of this registration.

Other professions have developed programs to motivate and reward a member's continuing education efforts. The Physician's Recognition Award is now required in some states before the state will relicense physicians for continued practice. The Minnesota Bar Association requires 45 hours of formal C.E. course work every three years before relicensing. The Minnesota dentists have had a statutory C.E. requirement since 1969. The legislatures of Ohio, Iowa, and California are requiring all licensed professionals to develop programs, including C.E. activities, that will provide proof of up-to-date technical competence by each practitioner before relicensing. The IEEE Validation of Educational Achievement Program may provide practicing engineers with the ability to respond to these legal requirements for practicing their profession.

Virtually all technical societies are concerned with motivating the continuing activities of their members and rewarding their efforts. The American Society of Quality Control certifies quality engineers and reliability engineers based on an examination and other requirements including C.E. efforts.

Over 10,000 members of the 40,000 member Society of Manufacturing Engineers (SME) have become certified in various areas, based on a variety of criteria including C.E. Of the engineering founder societies --- the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Institute of Chemical Engineers, the American Institute of Mining, Metallurgical and Petroleum Engineers, and Institute of Electrical and Electronics Engineers --- only the IEEE has formulated a specific program responsive to the previously mentioned needs.

THE PROGRAM

This program has been initiated to provide:

- IEEE recognition of acceptable participant performance in an IEEE evaluated and accepted course by a certificate and entry into the registry system.
- IEEE recognition of quality courses within the scope of the Institute's technical expertise by allowing CEAUs to be granted.
- An up-to-date transcript of each participant's completed continuing education courses from any responsible sponsor using any educational media is available from the registry.
- An aid to career planning is available via acceptable C.E. courses.

The quality of each sponsor's courses is assured through two levels of evaluation: peer evaluation by the appropriate Group or Society of the IEEE Technical Activities Board, and student evaluation upon completion of each continuing education course. In addition, each course participant's learning accomplishment is evaluated by the course sponsor.

Recognition of acceptable participant performance in an IEEE evaluated and accepted course is given by granting IEEE CEAUs. Courses not evaluated or accepted by IEEE will be recognized with the sponsor's credit units.

The IEEE Validation Program provides additional recognition by maintaining a permanent continuing education record for each participant in the Validation of the Education Achievement of Engineers program via the computer based registry system. As of April 30, 1981 the registry system was fully operational using an IBM 3033 CPU connected by Racal Vadic 3455 modems to an IEEE CPT 8000 word processor. The voluntary system contained 4037 participant records, of which 1626 were not IEEE members. This, of course, indicated a high level of interest by non members. The participants submitted 3863 attendances, 162 in non IEEE courses. Of these attendances 3061 were awarded CEAUs for attendance at IEEE pre-evaluated courses. Another 540 IEEE course attendances were awarded Merit Certificates. Thus, between attendances and participants, 7900 records were stored in the system at that time.

Additional analysis shows that of the 4037 participants 335 had degrees with 219 degrees from ABET accredited programs. The 3863 attendances involved 189 courses, 58 IEEE sponsored, from 80 sponsors. The 189 courses were in the 72 IEEE technical interest areas within the scope of the 25 IEEE Societies and Groups.

The registry service was initiated March 1980, and had 699 records by June 1980, 3731 by September 1980, 5071 by December 1980 and 6081 by March 1981. Now, over 5000 participants have reported over 10,000 course participations, and the number of records continues to grow.

THE REGISTRY SYSTEM

The system consists of 11 different computer generated laser printed mailsing, 7 different enclosures and a variety of information flow diagrams with associated computer programs. Appendix A provides a rather complete description of the registry system. All computer programs and system information is available to anyone interested in implementing a similar system.

PROGRAM EVALUATION

In August of 1981 an evaluation questionnaire was prepared and transmitted all participants, about 4,000. The 737 valid responses gave a very clear picture of support of the program. The raw data shown below.

Question	No Response	Strongly Disagree	Disagree	Agree	Strongly Agree
This is a worthy project	10	19	38	336	334
Prefer central registration	72	32	193	336	104

Question	No Response/	Strongly Disagree/	Disagree/	Agree/	Strongly Agree
Want certificate of achievement	108	24	140	308	157
Want course credit label	162	32	211	252	80
Want certificate of merit	169	46	291	196	35
Want transcript of achievement	108	14	87	313	215
Want permanent achievement registration	67	16	52	297	305
Rewarding personal experience	29	4	36	373	295
Expect employer recognition	32	49	225	332	99
Should be free to society member	70	35	177	298	157
Should be free to participants	77	40	178	304	138
Willing to pay	22	87	241	330	57
Fee amount should be $3.	149	78	145	240	125
Fee amount should be $5.	212	115	240	153	27
Fee should be less than $10.	186	131	153	137	130

Appendix B provides additional data and analysis of the survey.

COURSE EVALUATIONS AND DISSEMINATION

Appendix C shows the Course Evaluation Questionnaire which is filled out by participants. It also includes the results of evaluating a course which is sent to the instructor and will be used to weed out poor courses.

Information about the Validation Program has been made available to IEEE members via mailings, presentations, and articles. Figure 1 entitled "IEEE Focus on Education" describes the Program. It appeared in the January 1982 issue of the Institute, a newsletter which is sent to all IEEE members.

CONCLUSIONS

The NSF grant allowed the IEEE to establish a Validation of the Continuing Education Achievement of Engineers Program. The Program has been accepted and evaluated as being useful and appropriate. Other technical societies are investigating the Program with the objective of establishing a similar program.

Additional work is needed in two areas. First, a system for accrediting course sponsors should be established. Accredited sponsors will be allowed to grant CEAUs in appropriate courses. Student evaluations will be used to check on the quality of all CEAU quality courses.

Second, sequences of CEAU quality courses have to be developed in specific specialty areas to serve the needs of society. The IEEE should be a leader in this endeavor. The Validation Program provides the base needed to pursue this effort.

Appendix A

IEEE CONTINUING EDUCATION REGISTRY:

SYSTEM DESCRIPTION

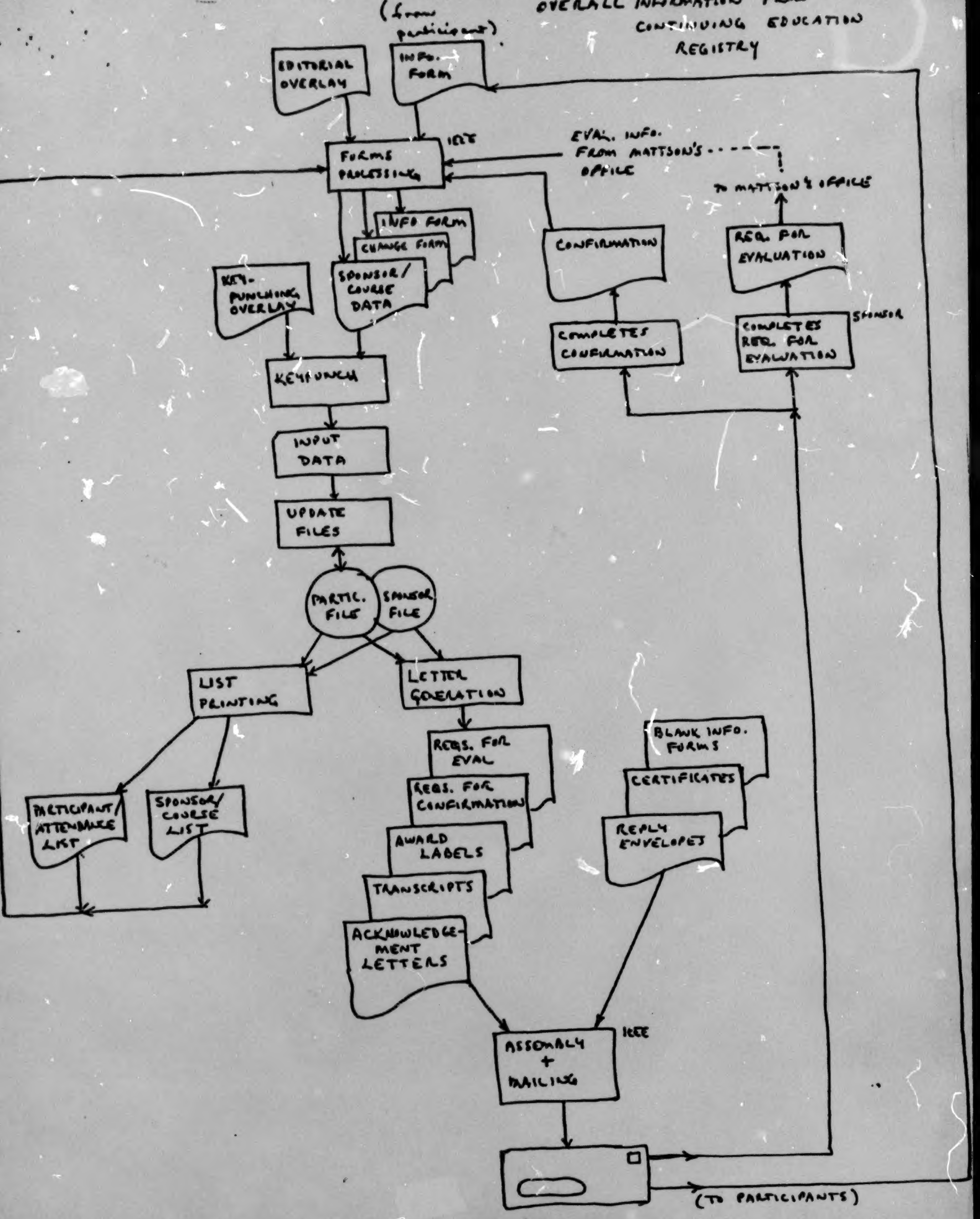
27 January 1980

Prepared for IEEE

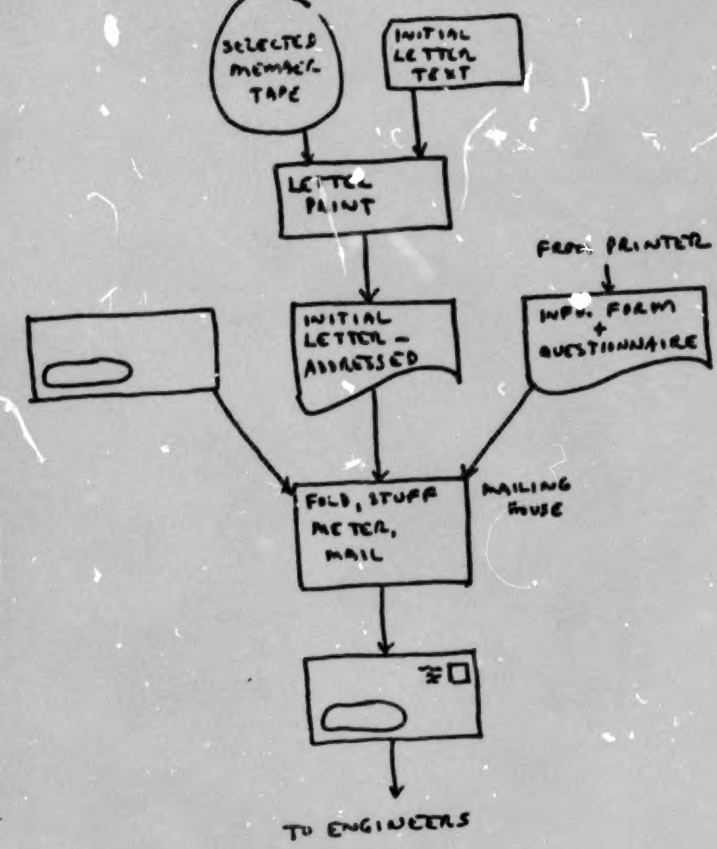
by

Context, Inc.
P. O. Box 216
Narberth, PA 19072

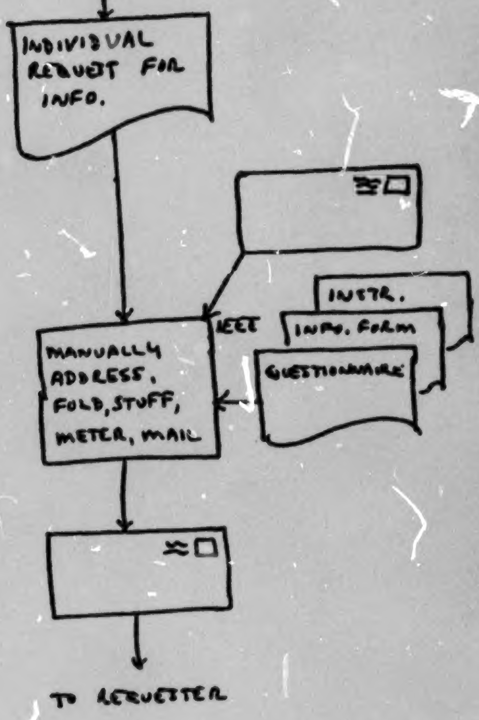
OVERALL INFORMATION FLOW — CONTINUING EDUCATION REGISTRY


(from participant)
INFO. FORM
EDITORIAL OVERLAY
IEEE
FORMS PROCESSING
EVAL. INFO. FROM MATTSON'S OFFICE
TO MATTSON'S OFFICE
INFO FORM
CHANGE FORM
SPONSOR/ COURSE DATA
KEY-PUNCHING OVERLAY
CONFIRMATION
REQ. FOR EVALUATION
COMPLETES CONFIRMATION
COMPLETES REQ. FOR EVALUATION
SPONSOR
KEYPUNCH
INPUT DATA
UPDATE FILES
PARTIC. FILE
SPONSOR FILE
LIST PRINTING
LETTER GENERATION
PARTICIPANT/ ATTENDANCE LIST
SPONSOR/ COURSE LIST
REQS. FOR EVAL
REQS. FOR CONFIRMATION
AWARD LABELS
TRANSCRIPTS
ACKNOWLEDGE-MENT LETTERS
BLANK INFO. FORMS
CERTIFICATES
REPLY ENVELOPES
ASSEMBLY + MAILING
IEEE
(TO PARTICIPANTS)

(INITIAL MAILING)


SELECTED MEMBER TAPE
INITIAL LETTER TEXT
LETTER PRINT
FROM PRINTER
INITIAL LETTER - ADDRESSED
INFO. FORM + QUESTIONNAIRE
FOLD, STUFF METER, MAIL
MAILING HOUSE
TO ENGINEERS

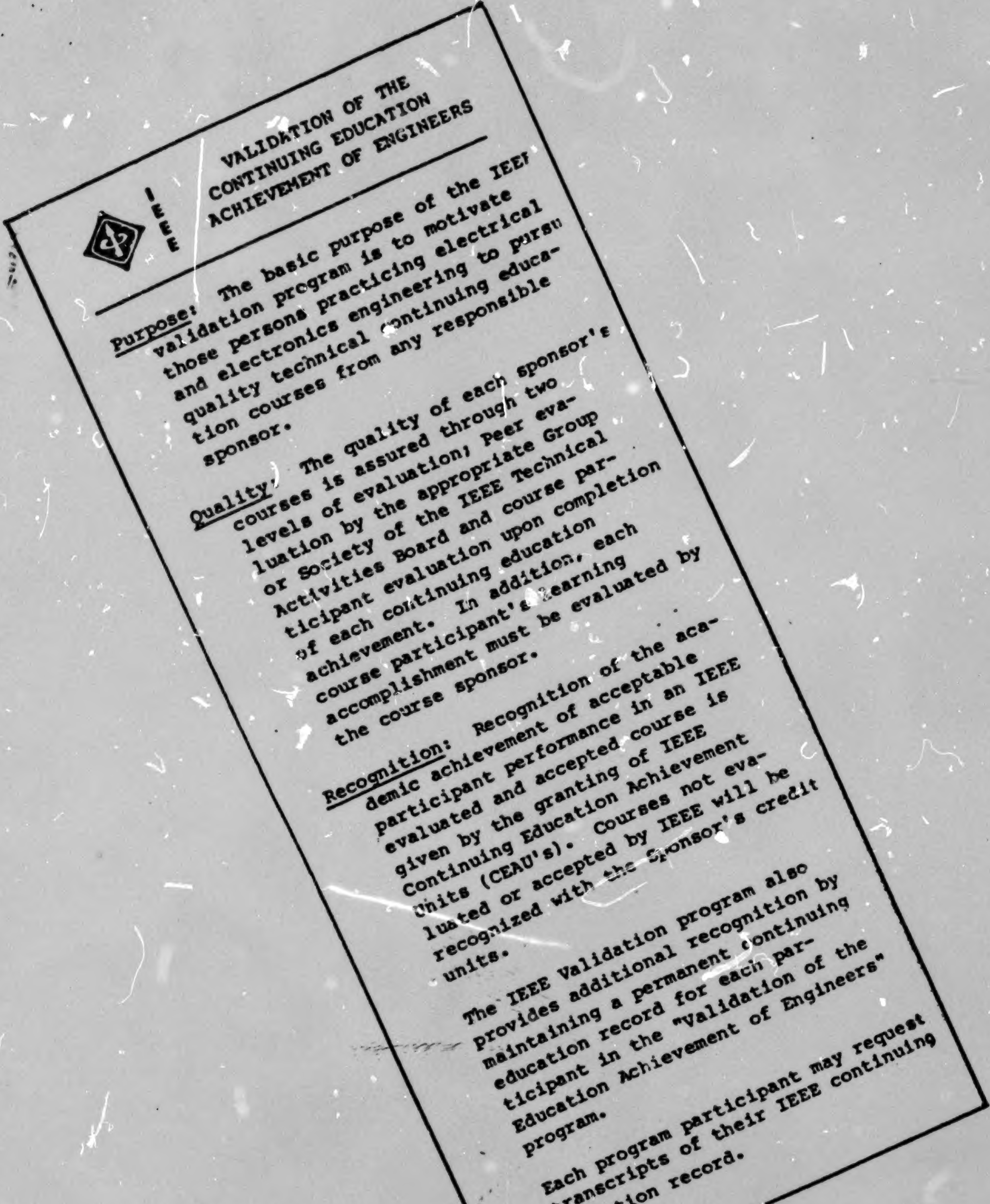
INFO. FORM DISTRIBUTION


INDIVIDUAL REQUEST FOR INFO.
INSTR.
INFO. FORM
QUESTIONNAIRE
MANUALLY ADDRESS, FOLD, STUFF, METER, MAIL
TO REQUESTER

OTHER ENCLOSURES

#9 REPLY ENVELOPE

FLYER DESCRIBING PURPOSE OF VALIDATION PROJECT



IEEE

VALIDATION OF THE
CONTINUING EDUCATION
ACHIEVEMENT OF ENGINEERS

Purpose: The basic purpose of the IEEE validation program is to motivate those persons practicing electrical and electronics engineering to pursu quality technical continuing education courses from any responsible sponsor.

Quality: The quality of each sponsor's courses is assured through two levels of evaluation; Peer evaluation by the appropriate Group or Society of the IEEE Technical Activities Board and course participant evaluation upon completion of each continuing education achievement. In addition, each course participant's learning accomplishment must be evaluated by the course sponsor.

Recognition: Recognition of the academic achievement of acceptable participant performance in an IEEE evaluated and accepted course is given by the granting of IEEE Continuing Education Achievement Units (CEAU's). Courses not evaluated or accepted by IEEE will be recognized with the Sponsor's credit units.

The IEEE Validation program also provides additional recognition by maintaining a permanent continuing education record for each participant in the "Validation of the Education Achievement of Engineers" program.

Each program participant may request transcripts of their IEEE continuing education record.

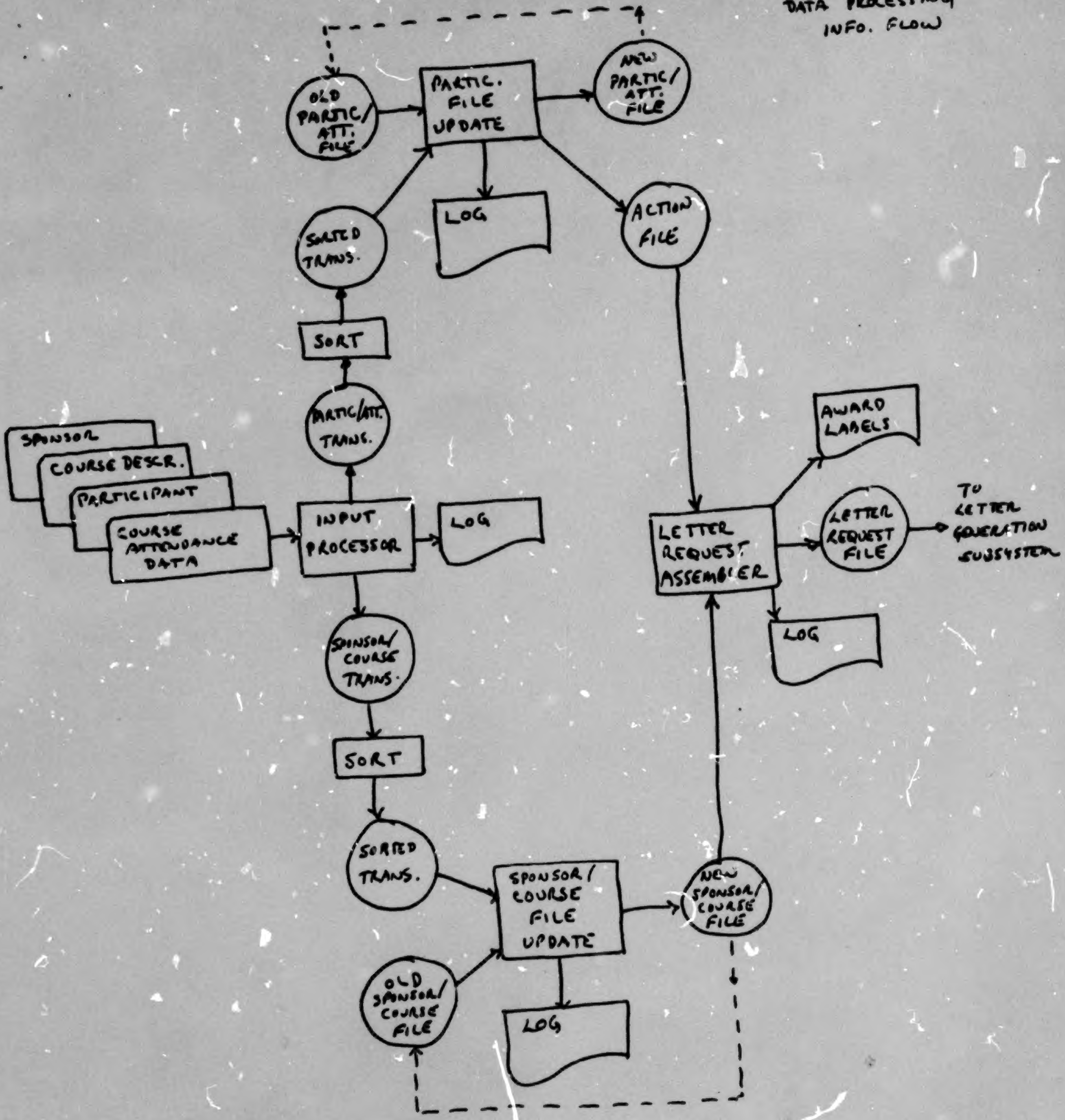
VALIDATION PROGRAM DESCRIPTION
(FLYER)

TO BE COMPLETED
AFTER EVALUATION QUESTIONNAIRE IS AVAILABLE

Signature of Sponsor's Representative______________________________

Date______________________________

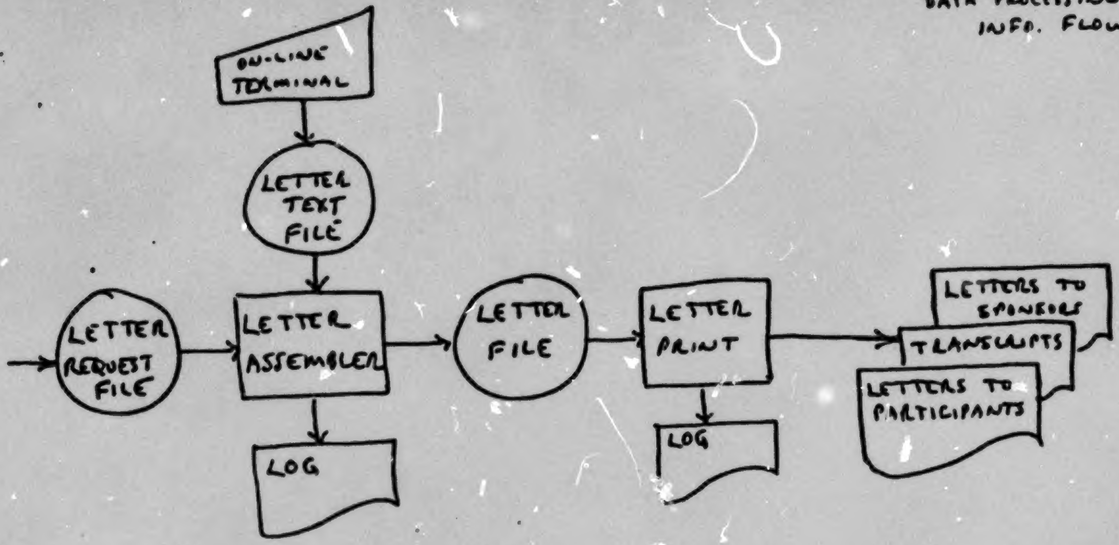
DATA PROCESSING
INFO. FLOW


OLD PARTIC/ ATT. FILE
PARTIC. FILE UPDATE
NEW PARTIC/ ATT. FILE
LOG
ACTION FILE
SORTED TRANS.
SORT
PARTIC/ATT. TRANS.
SPONSOR
COURSE DESCR.
PARTICIPANT
COURSE ATTENDANCE DATA
INPUT PROCESSOR
LOG
AWARD LABELS
LETTER REQUEST ASSEMBLER
LETTER REQUEST FILE
TO LETTER GENERATION SUBSYSTEM
LOG
SPONSOR/ COURSE TRANS.
SORT
SORTED TRANS.
SPONSOR/ COURSE FILE UPDATE
NEW SPONSOR/ COURSE FILE
OLD SPONSOR/ COURSE FILE
LOG

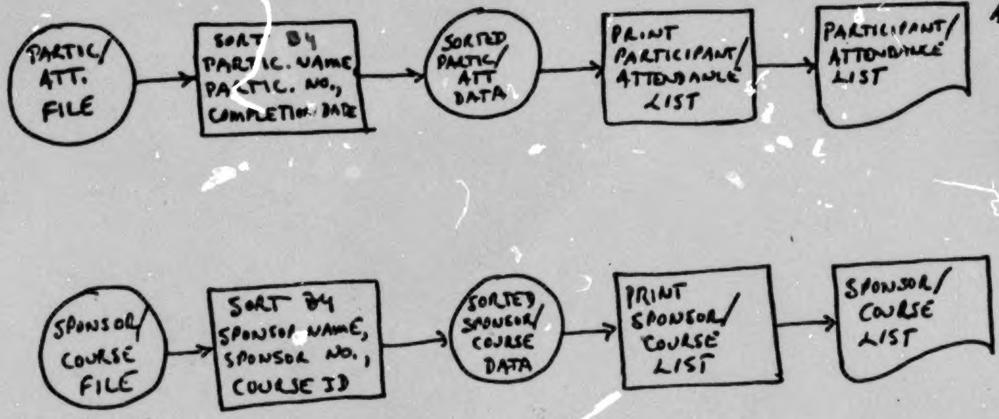
CONTINUING EDUCATION REGISTRY —
FILE MAINTENANCE

12-23-79

DATA PROCESSING
INFO. FLOW


ON-LINE TERMINAL
LETTER TEXT FILE
LETTER REQUEST FILE
LETTER ASSEMBLER
LOG
LETTER FILE
LETTER PRINT
LOG
LETTERS TO SPONSORS
TRANSCRIPTS
LETTERS TO PARTICIPANTS

CONTINUING EDUCATION REGISTRY —
LETTER GENERATION SUBSYSTEM


PARTIC/ ATT. FILE
SORT BY PARTIC. NAME PARTIC. NO., COMPLETION DATE
SORTED PARTIC/ ATT DATA
PRINT PARTICIPANT/ ATTENDANCE LIST
PARTICIPANT/ ATTENDANCE LIST
SPONSOR/ COURSE FILE
SORT BY SPONSOR NAME, SPONSOR NO., COURSE ID
SORTED SPONSOR/ COURSE DATA
PRINT SPONSOR/ COURSE LIST
SPONSOR/ COURSE LIST

PARTIC. DATA
ALPHABETIC BY
PARTIC. NAME,
COURSES BY
COMPLETION DATE

SPONSOR DATA
ALPHABETICALLY BY
SPONSOR NAME,
COURSES BY
COURSE ID.

CONTINUING EDUCATION REGISTRY —
MAINTENANCE LIST PRINTING

12-23-79

COMPUTER PROGRAM DESCRIPTIONS

1. Input Processor: formats input data, as keypunched, into standard transaction format, and dispatches the transactions to the appropriate Transaction File.
2. Participant/Attendance File Update: updates Participant/Attendance File in accordance with sorted Transaction File; prints log of all transactions, including appropriate error and warning messages; generates an Action File containing data appropriate for generating letters and transcripts.
3. Sponsor/Course File Update: updates Sponsor/Course File in accordance with sorted Transaction File; prints log of all transactions, including appropriate error and warning messages.
4. Letter Request Assembler: generates a letter request appropriate to each record in the Action File; generates an Award Label for each new course earning CEAUs. Letter request is in a standard format suitable for the letter-generation sub-system.
5. Print Participant/Attendance List: print participant data and attendance data in sequence determined by preceding Sort.
6. Print Sponsor/Course List: print sponsor and course description data in sequence determined by preceding Sort.
7. Letter Assembler: inserts data given in Letter Request File into letter forms given in Letter Text File; outputs letters as records to Letter File; prints letter counts and error messages on log.
8. Letter Print: prints letters as read from Letter File; prints letter count on log.

12-23-79

VALIDATION PROJECT - DATA PROCESSING CHANGE FORM FRONT

PARTICIPANT DATA

__ NEW RECORD
__ CHANGE
__ DELETE REC
__ TRANSCRIPT ONLY

Participant Ident - - - - - - - -
Participant Name 01 ________________
Address-1 02 ________________
Address-2 03 ________________
Address-3 04 ________________
City, etc. 05 ________________
Telephone 06 (   ) - X ________
Tel. No. Type 07 __ B if business
Coll. code 1st deg 08 ________
ECPD Accred Flag 09 __ Y if Yes
First deg. abbr. 10 ____
Major, abbr. 11 ________
Year 1st degree 12 _ _

ATTENDANCE DATA

__ NEW RECORD
__ CHANGE
__ DELETE REC

Course Ident - - - - - - - - - - -
Course completion 01 ________ YYMMDD
Sponsor Code 02 - - - - - - - - -
Course title 03 ________________
____
City Where Held 04 ________________
Course units, no. 05 _ _._
Course units, type 06 ________
Evaluation codes 07 ________________
____
Confirmation code 08 _ Y if Yes
Student perf. 09 ________

12-23-79

Initials ________
Date ________

PARTICIPANT/ATTENDANCE FILE DESCRIPTION

Sequential File; contains Participant Records and Attendance Records described below. Derived fields are re-derived on each update.

Participant Record Format

Type	Derived?	Name	
8ch		Participant Ident	SEQUENCE KEY
4ch		Course completion year and month, dummy	
10ch		Course Ident, dummy	
26ch	Y	Name key: participant last name, first name and initial (upper case)	
6ch	Y	Date last updated, format YYMMDD	
1ch	Y	Last update type: N-new, U-update, D-deleted	
36ch	Y	Name string suitable for address (colons removed)	
4cv	Y	Prefix	
20cv	Y	First and middle	
20cv	Y	Last name	
6cv	Y	Suffix	
32ch		Address-1	
32ch		Address-2	
32ch		Address-3	
32ch		City-state-zip or City-Country	
5n	Y	Zip	
20ch		Telephone number	
1ch		Telephone number type code: B-business, blank otherwise	
8ch		College code for first degree	
1ch		ECPD accreditation flag: Y-yes, no otherwise	
6ch		First degree, abbr.	
12ch		Major, abbr.	
2n		Year of first degree	
10ch		Spare	

338 bytes total

Attendance Record Format

Type	Derived?	Name	
8ch		Participant Ident	SEQUENCE KEY
4ch		Course completion year and month	
10ch		Course Ident	
26ch	Y	Name key, copied from Participant Record	
6ch	Y	Date last updated, format YYMMDD	
1ch	Y	Last update type: N-new, U-update, D-delete	
10ch		Sponsor code	
60ch		Course title	
6ch		Course completion date, format YYMMDD	
20ch		City where held	
3n		Course units, number in tenths	
8ch		Course units, type	
63ch		Evaluation codes	
1ch		Confirmation code: Y-yes, No otherwise	
6ch		Student performance	
10ch		Spare	

255 bytes total

12-24-79

SPONSOR/COURSE FILE DESCRIPTION

Sequential File; contains Sponsor Records and Course Description Records described below. Derived fields are re-derived on each update.

Sponsor Record Format

Type	Derived?	Name	
10ch		Sponsor Ident	} Sequence Key
10ch		Course ident dummy	
26ch		Name key: sponsor name (upper case)	
6ch	Y	Date last updated, format YYMMDD	
1ch	Y	Last update type: N-new, U-update, D-delete	
32ch		Contact name	
32ch		Sponsor name	
32ch		Address-1	
32ch		Address-2	
32ch		City-state-zip or City-country	
5n	Y	Zip	
20ch		Telephone number	
30ch		Sponsor short name, automatically derived from Sponsor Name if this field is blank	
6ch		Evaluation inquiry date, format YYMMDD	
10ch		Spare	

284 bytes total

Course Description Record Format

Type	Derived?	Name	
10ch		Sponsor Ident	} Sequence Key
10ch		Course Ident	
26ch		Name key: sponsor name, copied from Sponsor Record	
6ch	Y	Date last updated, format YYMMDD	
1ch	Y	Last update type: N-new, U-update, D-delete	
60ch		Course title	
40ch		Course short title, automatically derived from Course Title if this field is blank	
6ch		Course title entry or change date	
6ch		Classification code (TIP category code)	
6ch		Evaluation inquiry date, format YYMMDD	
20ch		IEEE evaluator name	
6ch		IEEE evaluation date, format YYMMDD	
4ch		IEEE evaluation rating	
3n		Course units, number in tenths	
8ch		Course units, type	
6ch		Course units entry or change date, format YYMMDD	
10ch		Spare	

228 bytes total

12-21-79

ACTION FILE DESCRIPTION

Each record of Action File causes one letter and associated enclosures to be generated. Action is determined by examination of the Control Data portion of the record, in accordance with the following rules:

- If Action Flag=C, a new course has been reported in the last course record included in the Action Record. Letters to be generated depend on whether this is first CEAU course, or some multiple of eight.
- If Action Flag=T and number of course records is zero, then a sample transcript is to be generated.
- If Action Flag=T and number of course records is greater than zero, then just a transcript has been requested, which will list all the course records given in this Action Record.

Control Data

1ch	Action Flag: C = new course reported T = transcript only
2n	Number of course records included in this Action Record

Participant Data

8ch	Participant Ident Number
36ch	Participant Name String suitable for address
4cv	Prefix
20cv	Last Name
32ch	Address-1
32ch	Address-2
32ch	Address-3
32ch	City-State-Zip or City-Country
5n	Zip (in case sorting by zip is necessary)
10ch	Spare

225 bytes total

Attendance Data (provision for 100 occurrences)

10ch	Sponsor Code
10ch	Course Ident
6ch	Course completion date, format YYMMDD
60ch	Course Title
3n	Course units, number in tenths
8ch	Course units, type
1ch	Confirmation code
10ch	Spare

118 bytes total

12-23-79

TRANSACTION RECORD FORMATS

Participant/Attendance File

1ch	File code "P"	SEQUENCE KEY
8ch	Participant Ident	
4ch	Course completion date, YYMM (blank for Participant Data)	
10ch	Course ident (blank for Participant Data)	
1ch	Transaction Type: N-new, U-update, D-delete, T-transcript only	
2n	Field number	
54ch	Field Value	

Sponsor/Course Description File

1ch	File code "S"	SEQUENCE KEY
10ch	Sponsor Ident	
10ch	Course Ident (blank for Sponsor Data)	
1ch	Transaction Type: N-new, U-update, D-delete	
2n	Field Number	
56ch	Field Value	

12-24-79

Appendix B

The IEEE mail survey is a data base with 737 valid returns. Approximately two-thirds of the returns were by third-class mail. Overall, responses to the individual items run heavily to the "agree" side of the scale. (Future surveys might want to reverse some item directions to test and/or correct for response bias.) The only items where over half of the respondees are on the disagree end of the scale are the third component of the third item "Want certificate of merit" and the second and third components of the last item "Fee should be $5" and "Fee should be less than $10." The non-response rate for the survey is very good except for items #3 and #8. The multiple response mode may not have been clear to the respondents on these items.

The matrix of correlation coefficients contains a great deal of useful information about the survey data. About forty percent of the correlations (all those over 0.08) can be regarded as a fairly accurate reflection of how people similar to the respondents would respond to these or related questions. (Significance determined at .05 level). Out of the 240 possible item inter-correlations, seventeen are .30 or higher, five are in the .40's and two are in the .50's (See starred items in annotated output.) Six of the seventeen high correlations are among the various multiple responses to items #3 and #8, while three more are between these responses and other items. The one item which does not correlate significantly with any other items is "Mail-class". In fact, none of the mail-class item correlations are large enough for one to state with confidence that they are different from zero.

The cross-tabulation or two-way frequency tables compare mail-class and item #1 ("worthy project") to a selection of items, including four composite indices. The first two composite indices were derived from the multiple responses to item #3. One, "WNTAWRDS", is a sum of all the awards a person checked at the "Agree" or "Agree Strongly" levels. The second, "DSLKAWDS", is a sum of all the awards checked by a person at "Disagree" or "Strongly disagree" levels. The third (FEEOK) and fourth (DSLKFEE) indices were formed by the same process with item #8. As in the correlation matrix, mail-class shows no dependable relationship to anything. The relationship of mail-class to the two indices from item #8 is almost significant at the .05 level. If the same proportions of responses held for a larger sample, then the results would be significant. If the results had reached statistical significance, they would have indicated that third-class mailers approved fewer separate fee structures than first-class mailers.

On the other hand, for item #1, "Worthy project", six out of a possible seven relationships show up as significant. Only mail-class has a non-significant relationship to "Worthy project". Respondents who agreed to the "worthy project" item also tended to agree with the other items except for the two indices DSLKAWDS and DSLKFEE. Response consistency is maintained here as well with the relationship between "worthy project" and fewer mentions of dislikes either on the awards or fee level items.

The differences between the item means for first-class mailers as against those of third-class mailers were tested by a T^2 for overall significance and a series of t-tests on each item individually. Neither the overall T^2 nor any of the individual T-tests are statistically significant, a result consistent with the results of the correlation matrix and the cross-tabulations.

Bivariate plots originally had been planned but these were not produced due to the inappropriate distributional pattern of the data. Because of the relatively narrow range of responses by the majority of respondents on most items, higher level (polynomial) relationships among the data seem unlikely.

Possible further analyses would depend on whether or not these preliminary results generate further questions. It certainly would be possible to examine the relationship of the entire survey or some subset of it to any one item (as was done with Item #1 here). It also would be possible to take a group of items (all of which relate to some particular item) and assess which items have a more powerful effect than others. The relationship between any two items of interest can be examined, as well, to determine how much of that relationship really comes only from those two items and how much is shared with other items. It is possible also to take any two chi-square statistics or any two correlation coefficients and determine if the difference between them is significant; that is, if one relationship is dependably stronger or more important (statistically) than another.

The most productive course of action at this point would appear to be:

1) client examine preliminary analysis results and raise any unanswered questions;

2) client communicate questions of interest, if any, for further analysis;

3) DAC Associates submit proposal for design and estimated costs of requested further analysis.

One Way Frequencies

Page 1 of 3

```
                  S T A T I S T I C A L   A N A L Y S I S   S Y S T E M      21:43 TUESDAY, AUGUST 18, 1981    1

                  MAILCLSS   FREQUENCY  CUM FREQ   PERCENT  CUM PERCENT

                         1         233       233    31.615       31.615
                         3         504       737    68.385      100.000


                            THIS IS A  WORTHY PROJECT
            WRTHYPRJ        FREQUENCY  CUM FREQ   PERCENT  CUM PERCENT

            NO RESPONSE            10         .         .            .
            STRONGLY DISAGRE       19        19     2.613        2.613
            DISAGREE               38        57     5.227        7.840
            AGREE                 336       393    46.217       54.058
            STRONGLY AGREE        334       727    45.942      100.000


                            PREFER CENTRAL REGISTRATION
            PRFCNTRG        FREQUENCY  CUM FREQ   PERCENT  CUM PERCENT

            NO RESPONSE            72         .         .            .
            STRONGLY DISAGRE       32        32     4.812        4.812
            DISAGREE              193       225    29.023       33.835
            AGREE                 336       561    50.526       84.361
            STRONGLY AGREE        104       665    15.639      100.000


                            WANT CERTIFICATE OF ACHIEVEMENT
            CRFCTACV        FREQUENCY  CUM FREQ   PERCENT  CUM PERCENT

            NO RESPONSE           108         .         .            .
            STRONGLY DISAGRE       24        24     3.816        3.816
            DISAGREE              140       164    22.258       26.073
            AGREE                 308       472    48.967       75.040
            STRONGLY AGREE        157       629    24.960      100.000


                            WANT COURSE CREDIT LABEL
            CRSCRDTL        FREQUENCY  CUM FREQ   PERCENT  CUM PERCENT

            NO RESPONSE           162         .         .            .
            STRONGLY DISAGRE       32        32     5.565        5.565
            DISAGREE              211       243    36.696       42.261
            AGREE                 252       495    43.826       86.087
            STRONGLY AGREE         80       575    13.913      100.000


                            WANT CERTIFICATE OF MERIT
            CRFCTMRT        FREQUENCY  CUM FREQ   PERCENT  CUM PERCENT

            NO RESPONSE           169         .         .            .
            STRONGLY DISAGRE       46        46     8.099        8.099
            DISAGREE              291       337    51.232       59.331
            AGREE                 196       533    34.507       93.838
            STRONGLY AGREE         35       568     6.162      100.000
```

Page 2 of 3

```
                    S T A T I S T I C A L   A N A L Y S I S   S Y S T E M      21:43 TUESDAY, AUGUST 18, 1981     2

                           WANT TRANSCRIPT OF ACHIEVIMENT
TRANACHV                 FREQUENCY  CUM FREQ    PERCENT  CUM PERCENT

NO RESPONSE                  108         .          .            .
STRONGLY DISAGRE              14        14      2.226        2.226
DISAGREE                      87       101     13.831       16.057
AGREE                        313       414     49.762       65.819
STRONGLY AGREE               215       629     34.181      100.000

                           WANT PERMANENT ACHVMNT RGSTRTN
PRMRGACV                 FREQUENCY  CUM FREQ    PERCENT  CUM PERCENT

NO RESPONSE                   67         .          .            .
STRONGLY DISAGRE              16        16      2.388        2.388
DISAGREE                      52        68      7.761       10.149
AGREE                        297       365     44.328       54.478
STRONGLY AGREE               305       670     45.522      100.000

                           REWARDING PERSONAL EXPERIENCE
REWPEREX                 FREQUENCY  CUM FREQ    PERCENT  CUM PERCENT

NO RESPONSE                   29         .          .            .
STRONGLY DISAGRE               4         4      0.565        0.565
DISAGREE                      36        40      5.085        5.650
AGREE                        373       413     52.684       58.333
STRONGLY AGREE               295       708     41.667      100.000

                           EXPECT EMPLOYER RECOGNITION
EXEMPREC                 FREQUENCY  CUM FREQ    PERCENT  CUM PERCENT

NO RESPONSE                   32         .          .            .
STRONGLY DISAGRE              49        49      6.950        6.950
DISAGREE                     225       274     31.915       38.865
AGREE                        332       606     47.092       85.957
STRONGLY AGREE                99       705     14.043      100.000

                           SHOULD BE FREE TO SOCIETY MEMBER
FREESOCS                 FREQUENCY  CUM FREQ    PERCENT  CUM PERCENT

NO RESPONSE                   70         .          .            .
STRONGLY DISAGRE              35        35      5.247        5.247
DISAGREE                     177       212     26.537       31.784
AGREE                        298       510     44.678       76.462
STRONGLY AGREE               157       667     23.538      100.000
```

```
       S T A T I S T I C A L   A N A L Y S I S   S Y S T E M        21:43 TUESDAY, AUGUST 18, 1981    3

                             SHOULD BE FREE TO PARTICIPANTS
FREEPART                   FREQUENCY  CUM FREQ   PERCENT   CUM PERCENT

NO RESPONSE                    77         .          .           .
STRONGLY DISAGRE               40        40        6.061       6.061
DISAGREE                      178       218       26.970      33.030
AGREE                         304       522       46.061      79.091
STRONGLY AGREE                138       660       20.909     100.000

                                   WILLING TO PAY
WILLTOPY                   FREQUENCY  CUM FREQ   PERCENT   CUM PERCENT

NO RESPONSE                    22         .          .           .
STRONGLY DISAGRE               87        87       12.168      12.168
DISAGREE                      241       328       33.706      45.874
AGREE                         330       658       46.154      92.028
STRONGLY AGREE                 57       715        7.972     100.000

                                FEE AMOUNT SHOULD BE $3
FEEAMT3                    FREQUENCY  CUM FREQ   PERCENT   CUM PERCENT

NO RESPONSE                   149         .          .           .
STRONGLY DISAGRE               78        78       13.265      13.265
DISAGREE                      145       223       24.660      37.925
AGREE                         240       463       40.816      78.741
STRONGLY AGREE                125       588       21.259     100.000

                                FEE AMOUNT SHOULD BE $5
FEEAMT5                    FREQUENCY  CUM FREQ   PERCENT   CUM PERCENT

NO RESPONSE                   212         .          .           .
STRONGLY DISAGRE              115       115       21.905      21.905
DISAGREE                      230       345       43.810      65.714
AGREE                         153       498       29.143      94.857
STRONGLY AGREE                 27       525        5.143     100.000

                              FEE SHOULD BE LESS THAN $10
FEELT10                    FREQUENCY  CUM FREQ   PERCENT   CUM PERCENT

NO RESPONSE                   186         .          .           .
STRONGLY DISAGRE              131       131       23.775      23.775
DISAGREE                      153       284       27.768      51.543
AGREE                         137       421       24.864      76.407
STRONGLY AGREE                130       551       23.593     100.000
```

Discriptive Statistics and Correlation Coefficients Page 1 of 4

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                                   S T A T I S T I C A L   A N A L Y S I S   S Y S T E M                                          1
                                                                                                    20:00 WEDNESDAY, AUGUST 19, 1981
VARIABLE      N               MEAN              STD DEV                SUM              MINIMUM              MAXIMUM


MAILCLSS     737         2.36770692          0.93057327      1745.00000000           1.00000000           3.00000000
WRTHYPRJ     727         3.35488308          0.70068853      2439.00000000           1.00000000           4.00000000
PRFCNTRG     665         2.76992481          0.76618922      1842.00000000           1.00000000           4.00000000
CRFCTACV     629         2.95071542          0.78953362      1856.00000000           1.00000000           4.00000000
CRSCRDTL     575         2.66086957          0.78406335      1530.00000000           1.00000000           4.00000000
CRFCTMRT     568         2.38732394          0.72348940      1356.00000000           1.00000000           4.00000000
TRANACHV     629         3.15898251          0.73807046      1987.00000000           1.00000000           4.00000000
PRMRGACV     670         3.32985075          0.72134133      2231.00000000           1.00000000           4.00000000
REWPEREX     708         3.35451977          0.60410610      2375.00000000           1.00000000           4.00000000
EXEMPREC     705         2.68226950          0.79846121      1891.00000000           1.00000000           4.00000000
FREESOCS     667         2.86506747          0.83275302      1911.00000000           1.00000000           4.00000000
FREEPART     660         2.81818182          0.83017981      1860.00000000           1.00000000           4.00000000
WILLTOPY     715         2.49930070          0.80852396      1787.00000000           1.00000000           4.00000000
FEEAMT3      588         2.70068027          0.94959843      1588.00000000           1.00000000           4.00000000
FEEAMT5      525         2.17523810          0.82872810      1142.00000000           1.00000000           4.00000000
FEELT10      551         2.48275862          1.09510166      1368.00000000           1.00000000           4.00000000


                        CORRELATION COEFFICIENTS / PROB > |R| UNDER H0:RHO=0 / NUMBER OF OBSERVATIONS

                               MAILCLSS WRTHYPRJ PRFCNTRG CRFCTACV CRSCRDTL CRFCTMRT TRANACHV PRMRGACV REWPEREX EXEMPREC FREESOCS

MAILCLSS                        1.00000 -0.03693 -0.02434  0.00083 -0.00493 -0.03598 -0.02176  0.01439  0.03400 -0.02068 -0.01008
                                 0.0000   0.3201   0.5309   0.9834   0.9060   0.3921   0.5860   0.7101   0.3663   0.5835   0.7949
                                    737      727      665      629      575      568      629      670      708      705      667

WRTHYPRJ                       -0.03693  1.00000  0.17934  0.24146  0.17220  0.22239  0.29202  0.40573* 0.38553* 0.22677  0.31554*
THIS IS A  WORTHY PROJECT        0.3201   0.0000   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001
                                    727      727      663      625      572      566      624      665      703      699      663

PRFCNTRG                       -0.02434  0.17934  1.00000  0.00032  0.03350  0.00246  0.13344  0.24247  0.03823  0.03647  0.09464
PREFER CENTRAL REGISTRATION      0.5309   0.0001   0.0000   0.9939   0.4399   0.9549   0.0013   0.0001   0.3324   0.3554   0.0190
                                    665      663      665      577      534      530      577      612      645      644      614
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                    S T A T I S T I C A L   A N A L Y S I S   S Y S T E M                        2
                                                                          20:00 WEDNESDAY, AUGUST 19, 1981

                   CORRELATION COEFFICIENTS / PROB > |R| UNDER H0:RHO=0 / NUMBER OF OBSERVATIONS

                           MAILCLSS WRTHYPRJ PRFCHTRG CRFCTACV CRSCRDTL CRFCTMRT TRANACHV PRMRJACV REWPEREX EXEMPREC FREESOCS

CRFCTACV                    0.00083  0.24146  0.00032  1.00000  0.41562* 0.45699* 0.09418  0.12536  0.29179  0.12072  0.16903
WANT CERTIFICATE OF ACHIEVEMENT
                             0.9834   0.0001   0.9939   0.0000   0.0001   0.0001   0.0219   0.0020   0.0001   0.0028   0.0001
                                629      625      577      629      563      562      592      606      614      610      597

CRSCRDTL                   -0.00493  0.17220  0.03350  0.41562* 1.00000  0.52407* 0.19615  0.12273  0.16211  0.17408  0.19002
WANT COURSE CREDIT LABEL     0.9060   0.0001   0.4399   0.0001   0.0000   0.0001   0.0001   0.0034   0.0001   0.0001   0.0001
                                575      572      534      563      575      555      564      568      561      565      552

CRFCTMRT                   -0.03598  0.22239  0.00246  0.45699* 0.52407* 1.00000  0.23021  0.15063  0.19545  0.13526  0.22444
WANT CERTIFICATE OF MERIT    0.3921   0.0001   0.9549   0.0001   0.0001   0.0000   0.0001   0.0003   0.0001   0.0014   0.0001
                                568      566      530      562      555      568      561      563      555      558      551

TRANACHV                   -0.02176  0.29202  0.13344  0.09418  0.19615  0.23021  1.00000  0.58154* 0.16948  0.18806  0.31822 *
WANT TRANSCRIPT OF ACHIEVIMENT
                             0.5860   0.0001   0.0013   0.0219   0.0001   0.0001   0.0000   0.0001   0.0001   0.0001   0.0001
                                629      624      577      592      564      561      629      610      611      614      596

PRMRGACV                    0.01439  0.40573* 0.24247  0.12536  0.12273  0.15063  0.58154* 1.00000  0.23399  0.19879  0.38592 *
WANT PERMANENT ACHVMNT RGSTRTN
                             0.7101   0.0001   0.0001   0.0020   0.0034   0.0003   0.0001   0.0000   0.0001   0.0001   0.0001
                                670      665      612      606      568      563      610      670      649      650      626

REWPEREX                    0.03400  0.38553* 0.03823  0.29179  0.16211  0.19545  0.16948  0.23399  1.00000  0.24770  0.15828
REWARDING PERSONAL EXPERIENCE
                             0.3663   0.0001   0.3324   0.0001   0.0001   0.0001   0.0001   0.0001   0.0000   0.0001   0.0001
                                708      703      645      614      561      555      611      649      708      684      646

EXEMPREC                   -0.02068  0.22677  0.03647  0.12072  0.17408  0.13526  0.18806  0.19879  0.24770  1.00000  0.21210
EXPECT EMPLOYER RECOGNITION  0.5835   0.0001   0.3554   0.0028   0.0001   0.0014   0.0001   0.0001   0.0001   0.0000   0.0001
                                705      699      644      610      565      558      614      650      684      705      646

FREESOCS                   -0.01008  0.31554* 0.09464  0.16903  0.19002  0.22444  0.31822* 0.38592* 0.15828  0.21210  1.00000
SHOULD BE FREE TO SOCIETY MEMBER
                             0.7949   0.0001   0.0190   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0001   0.0000
                                667      663      614      597      552      551      596      626      646      646      667

FREEPART                   -0.01387  0.19270  0.19440  0.23015  0.16205  0.22182  0.24053  0.24989  0.09933  0.08042  0.23789
SHOULD BE FREE TO PARTICIPANTS
                             0.7221   0.0001   0.0001   0.0001   0.0002   0.0001   0.0001   0.0001   0.0118   0.0420   0.0001
                                660      656      606      584      542      539      581      616      642      640      606

WILLTOPY                   -0.00618  0.34986* 0.20162  0.09577  0.07561  0.07677  0.14351  0.23798  0.24593  0.17646  0.03744
WILLING TO PAY               0.8690   0.0001   0.0001   0.0172   0.0723   0.0692   0.0003   0.0001   0.0001   0.0001   0.3383
                                715      710      653      618      566      561      617      657      693      693      656

FEEAMT3                    -0.06360  0.26782  0.12969  0.07309  0.06281  0.10848  0.15844  0.21510  0.14745  0.10062  0.06091
FEE AMOUNT SHOULD BE $3      0.1234   0.0001   0.0024   0.0924   0.1621   0.0159   0.0002   0.0001   0.0004   0.0158   0.1530
                                588      585      545      531      497      494      537      556      574      575      552

FEEAMT5                     0.02269  0.15718  0.00754  0.06637  0.07259  0.07707  0.01653  0.03880  0.09785  0.07945 -0.05159
FEE AMOUNT SHOULD BE $5      0.6039   0.0003   0.8674   0.1465   0.1225   0.0995   0.7174   0.3857   0.0270   0.0730   0.2462
                                525      524      493      480      454      458      482      502      511      510      507

FEELT10                    -0.03569  0.15722  0.07458  0.04979  0.00481 -0.01387  0.02013  0.16309  0.10097  0.07336 -0.06683
FEE SHOULD BE LESS THAN $10  0.4031   0.0002   0.0915   0.2645   0.9171   0.7633   0.6524   0.0002   0.0194   0.0900   0.1251
                                551      547      513      504      471      474      503      525      536      535      528
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                              S T A T I S T I C A L   A N A L Y S I S   S Y S T E M          20:00 WEDNESDAY, AUGUST 19, 1981   3

                      CORRELATION COEFFICIENTS / PROB > |R| UNDER H0:RHO=0 / NUMBER OF OBSERVATIONS

                                  FREEPART WILLTOPY  FEEAMT3  FEEAMT5  FEELT10

                                  -0.01387 -0.00618 -0.06360  0.02269 -0.03569
MAILCLSS                            0.7221   0.8690   0.1234   0.6039   0.4031
                                       660      715      588      525      551

                                   0.19270  0.34986* 0.26782  0.15718  0.15722
WRTHYPRJ                            0.0001   0.0001   0.0001   0.0003   0.0002
THIS IS A  WORTHY PROJECT              656      710      585      524      547

                                   0.19440  0.20162  0.12969  0.00754  0.07458
PRFCNTRG                            0.0001   0.0001   0.0024   0.8674   0.0915
PREFER CENTRAL REGISTRATION            606      653      545      493      513

                                   0.23015  0.09577  0.07309  0.06637  0.04979
CRFCTACV                            0.0001   0.0172   0.0924   0.1465   0.2645
WANT CERTIFICATE OF ACHIEVEMENT        584      618      531      480      504

                                   0.16205  0.07561  0.06281  0.07259  0.00481
CRSCRDTL                            0.0002   0.0723   0.1621   0.1225   0.9171
WANT COURSE CREDIT LABEL               542      566      497      454      471

                                   0.22182  0.07677  0.10848  0.07707 -0.01387
CRFCTMRT                            0.0001   0.0692   0.0159   0.0995   0.7633
WANT CERTIFICATE OF MERIT              539      561      494      458      474

                                   0.24053  0.14351  0.15844  0.01653  0.02013
TRANACHV                            0.0001   0.0003   0.0002   0.7174   0.6524
WANT TRANSCRIPT OF ACHIEVIMENT         581      617      537      482      503

                                   0.24989  0.23798  0.21510  0.03860  0.16309
PRMRGACV                            0.0001   0.0001   0.0001   0.3857   0.0002
WANT PERMANENT ACHVMNT RGSTRTN         616      657      556      502      525

                                   0.09933  0.24593  0.14745  0.09785  0.10097
REWPEREX                            0.0118   0.0001   0.0004   0.0270   0.0194
REWARDING PERSONAL EXPERIENCE          642      693      574      511      536

                                   0.08042  0.17646  0.10062  0.07945  0.07336
EXEMPREC                            0.0420   0.0001   0.0158   0.0730   0.0900
EXPECT EMPLOYER RECOGNITION            640      693      575      510      535

                                   0.23789  0.03744  0.06091 -0.05159 -0.06683
FREESOCS                            0.0001   0.3383   0.1530   0.2462   0.1251
SHOULD BE FREE TO SOCIETY MEMBER       606      656      552      507      528

                                   1.00000  0.01238  0.14947 -0.06380  0.02693
FREEPART                            0.0000   0.7531   0.0005   0.1564   0.5408
SHOULD BE FREE TO PARTICIPANTS         660      648      539      495      518

                                   0.01238  1.00000  0.48751* 0.47947* 0.39496 *
WILLTOPY                            0.7531   0.0000   0.0001   0.0001   0.0001
WILLING TO PAY                         648      715      581      522      548
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                           S T A T I S T I C A L   A N A L Y S I S   S Y S T E M        20:00 WEDNESDAY, AUGUST 19, 1981   4

                       CORRELATION COEFFICIENTS / PROB > |R| UNDER H0:RHO=0 / NUMBER OF OBSERVATIONS

                                   FREEPART WILLTOPY  FEEAMT3  FEEAMT5  FEELT10

                                    0.14947  0.48751 *1.00000  0.36449 *0.36873 *
FEEAMT3                             0.0005   0.0001   0.0000   0.0001   0.0001
FEE AMOUNT SHOULD BE $3                539      581      588      492      491

                                   -0.06380  0.47947 *0.36449 *1.00000  0.40883 *
FEEAMT5                             0.1564   0.0001   0.0001   0.0000   0.0001
FEE AMOUNT SHOULD BE $5                495      522      492      525      485

                                    0.02693  0.39496 *0.36873 *0.40883 *1.00000
FEELT10                             0.5408   0.0001   0.0001   0.0001   0.0000
FEE SHOULD BE LESS THAN $10            518      548      491      485      551
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                                                                                    1
       S T A T I S T I C A L   A N A L Y S I S   S Y S T E M      21:10 WEDNESDAY, AUGUST 19, 1981

                        TABLE OF MAILCLSS BY WRTHYPRJ

     MAILCLSS     WRTHYPRJ  THIS IS A  WORTHY PROJECT

     FREQUENCY|
      PERCENT |
      ROW PCT |
      COL PCT |NO RESPO|STRONGLY|DISAGREE|AGREE   |STRONGLY|
              |NSE     | DISAGRE|        |        | AGREE  |  TOTAL
     ---------+--------+--------+--------+--------+--------+
            1 |      4 |      3 |     12 |    106 |    108 |    229
              |      . |   0.41 |   1.65 |  14.58 |  14.86 |  31.50
              |      . |   1.31 |   5.24 |  46.29 |  47.16 |
              |      . |  15.79 |  31.58 |  31.55 |  32.34 |
     ---------+--------+--------+--------+--------+--------+
            3 |      6 |     16 |     26 |    230 |    226 |    498
              |      . |   2.20 |   3.58 |  31.64 |  31.09 |  68.50
              |      . |   3.21 |   5.22 |  46.18 |  45.38 |
              |      . |  84.21 |  68.42 |  68.45 |  67.66 |
     ---------+--------+--------+--------+--------+--------+
     TOTAL           .       19       38      336      334      727
                     .     2.61     5.23    46.22    45.94   100.00

                        STATISTICS FOR 2-WAY TABLES

      CHI-SQUARE                          2.282    DF=     3  PROB=0.5160
      PHI                                 0.056
      CONTINGENCY COEFFICIENT             0.056
      CRAMER'S V                          0.056
      LIKELIHOOD RATIO CHISQUARE          2.572    DF=     3  PROB=0.4625
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                                                                                    2
      S T A T I S T I C A L   A N A L Y S I S   S Y S T E M      21:10 WEDNESDAY, AUGUST 19, 1981

                          TABLE OF MAILCLSS BY WNTAWRDS

MAILCLSS     WNTAWRDS  LIKE AWARDS

FREQUENCY|
 PERCENT |
 ROW PCT |
 COL PCT |       .|       0|       1|       2|       3|       4|       5|  TOTAL
---------+--------+--------+--------+--------+--------+--------+--------+
       1 |      63|       3|       5|      43|      37|      29|      53|    170
         |       .|    0.55|    0.91|    7.82|    6.73|    5.27|    9.64|  30.91
         |       .|    1.76|    2.94|   25.29|   21.76|   17.06|   31.18|
         |       .|   23.08|   25.00|   32.09|   28.46|   34.12|   31.55|
---------+--------+--------+--------+--------+--------+--------+--------+
       3 |     124|      10|      15|      91|      93|      56|     115|    380
         |       .|    1.82|    2.73|   16.55|   16.91|   10.18|   20.91|  69.09
         |       .|    2.63|    3.95|   23.95|   24.47|   14.74|   30.26|
         |       .|   76.92|   75.00|   67.91|   71.54|   65.88|   68.45|
---------+--------+--------+--------+--------+--------+--------+--------+
TOTAL            .       13       20      134      130       85      168      550
                 .     2.36     3.64    24.36    23.64    15.45    30.55   100.00

                          STATISTICS FOR 2-WAY TABLES

            CHI-SQUARE                          1.594    DF=    5  PROB=0.9019
            PHI                                 0.054
            CONTINGENCY COEFFICIENT             0.054
            CRAMER'S V                          0.054
            LIKELIHOOD RATIO CHISQUARE          1.626    DF=    5  PROB=0.8981
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NoT Sig.

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                          TABLE OF MAILCLSS BY DSLKAWDS

MAILCLSS     DSLKAWDS  DISLIKE AWARDS

FREQUENCY|
PERCENT  |
ROW PCT  |
COL PCT  |       .|       0|       1|       2|       3|       4|       5|  TOTAL
---------+--------+--------+--------+--------+--------+--------+--------+
       1 |     63 |     53 |     29 |     37 |     43 |      5 |      3 |    170
         |      . |   9.64 |   5.27 |   6.73 |   7.82 |   0.91 |   0.55 |  30.91
         |      . |  31.18 |  17.06 |  21.76 |  25.29 |   2.94 |   1.76 |
         |      . |  31.55 |  34.12 |  28.46 |  32.09 |  25.00 |  23.08 |
---------+--------+--------+--------+--------+--------+--------+--------+
       3 |    124 |    115 |     56 |     93 |     91 |     15 |     10 |    380
         |      . |  20.91 |  10.18 |  16.91 |  16.55 |   2.73 |   1.82 |  69.09
         |      . |  30.26 |  14.74 |  24.47 |  23.95 |   3.95 |   2.63 |
         |      . |  68.45 |  65.88 |  71.54 |  67.91 |  75.00 |  76.92 |
---------+--------+--------+--------+--------+--------+--------+--------+
TOTAL           .      168       85      130      134       20       13      550
                .    30.55    15.45    23.64    24.36     3.64     2.36   100.00

                         STATISTICS FOR 2-WAY TABLES

          CHI-SQUARE                          1.594   DF=   5  PROB=0.9019
          PHI                                 0.054
          CONTINGENCY COEFFICIENT             0.054
          CRAMER'S V                          0.054
          LIKELIHOOD RATIO CHISQUARE          1.626   DF=   5  PROB=0.8981
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                         TABLE OF MAILCLSS BY FREESOCS

MAILCLSS      FREESOCS  SHOULD BE FREE TO SOCIETY MEMBER

FREQUENCY|
PERCENT  |
ROW PCT  |
COL PCT  |NO RESPO|STRONGLY|DISAGREE|AGREE   |STRONGLY|  TOTAL
         |NSE     |DISAGRE |        |        |AGREE   |
---------+--------+--------+--------+--------+--------+
       1 |     21 |      8 |     60 |     94 |     50 |    212
         |      . |   1.20 |   9.00 |  14.09 |   7.50 |  31.78
         |      . |   3.77 |  28.30 |  44.34 |  23.58 |
         |      . |  22.86 |  33.90 |  31.54 |  31.85 |
---------+--------+--------+--------+--------+--------+
       3 |     49 |     27 |    117 |    204 |    107 |    455
         |      . |   4.05 |  17.54 |  30.58 |  16.04 |  68.22
         |      . |   5.93 |  25.71 |  44.84 |  23.52 |
         |      . |  77.14 |  66.10 |  68.46 |  68.15 |
---------+--------+--------+--------+--------+--------+
TOTAL           .       35      177      298      157      667
                .     5.25    26.54    44.68    23.54   100.00

                     STATISTICS FOR 2-WAY TABLES

CHI-SQUARE                          1.660   DF=   3  PROB=0.6460
PHI                                 0.050
CONTINGENCY COEFFICIENT             0.050
CRAMER'S V                          0.050
LIKELIHOOD RATIO CHISQUARE          1.735   DF=   3  PROB=0.6292
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S T A T I S T I C A L   A N A L Y S I S   S Y S T E M
                                                  21:10 WEDNESDAY, AUGUST 19, 1981

                TABLE OF MAILCLSS BY WILLTOPY

MAILCLSS     WILLTOPY  WILLING TO PAY

FREQUENCY|
 PERCENT |
 ROW PCT |
 COL PCT |NO RESPO|STRONGLY|DISAGREE|AGREE   |STRONGLY|
         |NSE     | DISAGRE|        |        | AGREE  |  TOTAL
---------+--------+--------+--------+--------+--------+
       1 |      8 |     23 |     79 |    109 |     14 |    225
         |      . |   3.22 |  11.05 |  15.24 |   1.96 |  31.47
         |      . |  10.22 |  35.11 |  48.44 |   6.22 |
         |      . |  26.44 |  32.78 |  33.03 |  24.56 |
---------+--------+--------+--------+--------+--------+
       3 |     14 |     64 |    162 |    221 |     43 |    490
         |      . |   8.95 |  22.66 |  30.91 |   6.01 |  68.53
         |      . |  13.06 |  33.06 |  45.10 |   8.78 |
         |      . |  73.56 |  67.22 |  66.97 |  75.44 |
---------+--------+--------+--------+--------+--------+
TOTAL           .       87      241      330       57      715
                .    12.17    33.71    46.15     7.97   100.00

              STATISTICS FOR 2-WAY TABLES

 CHI-SQUARE                            2.848   DF=   3  PROB=0.4157
 PHI                                   0.063
 CONTINGENCY COEFFICIENT               0.063
 CRAMER'S V                            0.063
 LIKELIHOOD RATIO CHISQUARE            2.935   DF=   3  PROB=0.4018
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          S T A T I S T I C A L   A N A L Y S I S   S Y S T E M                                   7
                                                                   21:10 WEDNESDAY, AUGUST 19, 1981

                              TABLE OF MAILCLSS BY FEEOK

MAILCLSS      FEEOK      FEE AMOUNTS APPROVED

FREQUENCY|
 PERCENT |
 ROW PCT |
 COL PCT |       .|       0|       1|       2|       3|  TOTAL
---------+--------+--------+--------+--------+--------+
       1 |     82 |      43|      39|      48|      21|    151
         |       .|    8.88|    8.06|    9.92|    4.34|  31.20
         |       .|   28.48|   25.83|   31.79|   13.91|
         |       .|   30.71|   26.00|   41.03|   27.27|
---------+--------+--------+--------+--------+--------+
       3 |    171 |      97|     111|      69|      56|    333
         |       .|   20.04|   22.93|   14.26|   11.57|  68.80
         |       .|   29.13|   33.33|   20.72|   16.82|
         |       .|   69.29|   74.00|   58.97|   72.73|
---------+--------+--------+--------+--------+--------+
TOTAL            .      140      150      117       77      484
                 .    28.93    30.99    24.17    15.91   100.00

                           STATISTICS FOR 2-WAY TABLES

 CHI-SQUARE                                 7.721    DF=    3  PROB=0.0522
 PHI                                        0.126
 CONTINGENCY COEFFICIENT                    0.125
 CRAMER'S V                                 0.126
 LIKELIHOOD RATIO CHISQUARE                 7.554    DF=    3  PROB=0.0562
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Close To sig.

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   S T A T I S T I C A L   A N A L Y S I S   S Y S T E M                  8
                                                 21:10 WEDNESDAY, AUGUST 19, 1981

                TABLE OF MAILCLSS BY DSLKFEE

MAILCLSS     DSLKFEE   DISLIKES SUGGESTED FEE LEVELS

FREQUENCY|
 PERCENT |
 ROW PCT |
 COL PCT |       .|       0|       1|       2|       3|  TOTAL
---------+--------+--------+--------+--------+--------+
       1 |      82|      21|      48|      39|      43|    151
         |       .|    4.34|    9.92|    8.06|    8.88|  31.20
         |       .|   13.91|   31.79|   25.83|   28.48|
         |       .|   27.27|   41.03|   26.00|   30.71|
---------+--------+--------+--------+--------+--------+
       3 |     171|      56|      69|     111|      97|    333
         |       .|   11.57|   14.26|   22.93|   20.04|  68.80
         |       .|   16.82|   20.72|   33.33|   29.13|
         |       .|   72.73|   58.97|   74.00|   69.29|
---------+--------+--------+--------+--------+--------+
TOTAL            .       77      117      150      140      484
                 .    15.91    24.17    30.99    28.93   100.00

                STATISTICS FOR 2-WAY TABLES

 CHI-SQUARE                        7.721    DF=   3  PROB=0.0522
 PHI                               0.126
 CONTINGENCY COEFFICIENT           0.125
 CRAMER'S V                        0.126
 LIKELIHOOD RATIO CHISQUARE        7.554    DF=   3  PROB=0.0562
```

Close To Sig.

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                  S T A T I S T I C A L   A N A L Y S I S   S Y S T E M                  9
                                                            21:10 WEDNESDAY, AUGUST 19, 1981

                                TABLE OF WRTHYPRJ BY WNTAWRDS

          WRTHYPRJ  THIS IS A  WORTHY PROJECT   WNTAWRDS  LIKE AWARDS

          FREQUENCY        |
           PERCENT         |
           ROW PCT         |
           COL PCT         |      .|      0|      1|      2|      3|      4|      5|  TOTAL
          -----------------+-------+-------+-------+-------+-------+-------+-------+
          NO RESPONSE      |      8|      0|      0|      1|      0|      0|      1|      .
                           |      .|      .|      .|      .|      .|      .|      .|      .
                           |      .|      .|      .|      .|      .|      .|      .|
                           |      .|      .|      .|      .|      .|      .|      .|
          -----------------+-------+-------+-------+-------+-------+-------+-------+
          STRONGLY DISAGRE |      6|      4|      1|      6|      0|      1|      1|     13
                           |      .|   0.73|   0.18|   1.09|   0.00|   0.18|   0.18|   2.37
                           |      .|  30.77|   7.69|  46.15|   0.00|   7.69|   7.69|
                           |      .|  30.77|   5.00|   4.51|   0.00|   1.18|   0.60|
          -----------------+-------+-------+-------+-------+-------+-------+-------+
          DISAGREE         |     10|      7|      4|      9|      6|      1|      1|     28
                           |      .|   1.28|   0.73|   1.64|   1.09|   0.18|   0.18|   5.11
                           |      .|  25.00|  14.29|  32.14|  21.43|   3.57|   3.57|
                           |      .|  53.85|  20.00|   6.77|   4.62|   1.18|   0.60|
          -----------------+-------+-------+-------+-------+-------+-------+-------+
          AGREE            |     81|      1|      8|     74|     64|     40|     68|    255
                           |      .|   0.18|   1.46|  13.50|  11.68|   7.30|  12.41|  46.53
                           |      .|   0.39|   3.14|  29.02|  25.10|  15.69|  26.67|
                           |      .|   7.69|  40.00|  55.64|  49.23|  47.06|  40.72|
          -----------------+-------+-------+-------+-------+-------+-------+-------+
          STRONGLY AGREE   |     82|      1|      7|     44|     60|     43|     97|    252
                           |      .|   0.18|   1.28|   8.03|  10.95|   7.85|  17.70|  45.99
                           |      .|   0.40|   2.78|  17.46|  23.81|  17.06|  38.49|
                           |      .|   7.69|  35.00|  33.08|  46.15|  50.59|  58.08|
          -----------------+-------+-------+-------+-------+-------+-------+-------+
          TOTAL                   .      13      20     133     130      85     167     548
                                  .    2.37    3.65   24.27   23.72   15.51   30.47  100.00

                                 STATISTICS FOR 2-WAY TABLES

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.
         TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

                      CHI-SQUARE                      155.644    DF=  15   PROB=0.0001
                      PHI                               0.533
                      CONTINGENCY COEFFICIENT           0.470
                      CRAMER'S V                        0.308
                      LIKELIHOOD RATIO CHISQUARE       94.017    DF=  15   PROB=0.0001
```

highly sig.

With the size of CHISQUARES represented here, this is not a problem for this or any other 'WRTHYPRJ' table

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                    S T A T I S T I C A L   A N A L Y S I S   S Y S T E M

                               TABLE OF WRTHYPRJ BY DSLKAWDS

                WRTHYPRJ  THIS IS A  WORTHY PROJECT   DSLKAWDS  DISLIKE AWARDS

                FREQUENCY        |
                 PERCENT         |
                 ROW PCT         |
                 COL PCT         |      .|      0|      1|      2|      3|      4|      5|  TOTAL
                -----------------+-------+-------+-------+-------+-------+-------+-------+
                NO RESPONSE      |      8|      1|      0|      0|      1|      0|      0|      .
                                 |      .|      .|      .|      .|      .|      .|      .|      .
                                 |      .|      .|      .|      .|      .|      .|      .|
                                 |      .|      .|      .|      .|      .|      .|      .|
                -----------------+-------+-------+-------+-------+-------+-------+-------+
                STRONGLY DISAGRE |      6|      1|      1|      0|      6|      1|      4|     13
                                 |      .|   0.18|   0.18|   0.00|   1.09|   0.18|   0.73|   2.37
                                 |      .|   7.69|   7.69|   0.00|  46.15|   7.69|  30.77|
                                 |      .|   0.60|   1.18|   0.00|   4.51|   5.00|  30.77|
                -----------------+-------+-------+-------+-------+-------+-------+-------+
                DISAGREE         |     10|      1|      1|      6|      9|      4|      7|     28
                                 |      .|   0.18|   0.18|   1.09|   1.64|   0.73|   1.28|   5.11
                                 |      .|   3.57|   3.57|  21.43|  32.14|  14.29|  25.00|
                                 |      .|   0.60|   1.18|   4.62|   6.77|  20.00|  53.85|
                -----------------+-------+-------+-------+-------+-------+-------+-------+
                AGREE            |     81|     68|     40|     64|     74|      8|      1|    255
                                 |      .|  12.41|   7.30|  11.63|  13.50|   1.46|   0.18|  46.53
                                 |      .|  26.67|  15.69|  25.10|  29.02|   3.14|   0.39|
                                 |      .|  40.72|  47.06|  49.23|  55.64|  40.00|   7.69|
                -----------------+-------+-------+-------+-------+-------+-------+-------+
                STRONGLY AGREE   |     82|     97|     43|     60|     44|      7|      1|    252
                                 |      .|  17.70|   7.85|  10.95|   8.03|   1.28|   0.18|  45.99
                                 |      .|  38.49|  17.06|  23.81|  17.46|   2.78|   0.40|
                                 |      .|  58.08|  50.59|  46.15|  33.08|  35.00|   7.69|
                -----------------+-------+-------+-------+-------+-------+-------+-------+
                TOTAL                   .     167      85     130     133      20      13     548
                                        .   30.47   15.51   23.72   24.27    3.65    2.37  100.00

                                      STATISTICS FOR 2-WAY TABLES

     WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.
              TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

                          CHI-SQUARE                    155.644   DF=  15  PROB=0.0001
                          PHI                             0.533
                          CONTINGENCY COEFFICIENT         0.470
                          CRAMER'S V                      0.308
                          LIKELIHOOD RATIO CHISQUARE     94.017   DF=  15  PROB=0.0001
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h.s.

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                    STATISTICAL   ANALYSIS   SYSTEM                        11
                                                   21:10 WEDNESDAY, AUGUST 19, 1981

                           TABLE OF WRTHYPRJ BY FREESOCS

         WRTHYPRJ  THIS IS A  WORTHY PROJECT   FREESOCS  SHOULD BE FREE TO SOCIETY MEMBER

         FREQUENCY       |
          PERCENT        |
          ROW PCT        |
          COL PCT        |NO RESPO|STRONGLY|DISAGREE|AGREE   |STRONGLY|  TOTAL
                         |NSE     | DISAGRE|        |        | AGREE  |
         ----------------+--------+--------+--------+--------+--------+
         NO RESPONSE     |      6 |      0 |      0 |      2 |      2 |      .
                         |      . |      . |      . |      . |      . |      .
                         |      . |      . |      . |      . |      . |
                         |      . |      . |      . |      . |      . |
         ----------------+--------+--------+--------+--------+--------+
         STRONGLY DISAGRE|      2 |     10 |      3 |      2 |      2 |     17
                         |      . |   1.51 |   0.45 |   0.30 |   0.30 |   2.56
                         |      . |  58.82 |  17.65 |  11.76 |  11.76 |
                         |      . |  28.57 |   1.69 |   0.68 |   1.29 |
         ----------------+--------+--------+--------+--------+--------+
         DISAGREE        |      2 |      4 |     20 |      9 |      3 |     36
                         |      . |   0.60 |   3.02 |   1.36 |   0.45 |   5.43
                         |      . |  11.11 |  55.56 |  25.00 |   8.33 |
                         |      . |  11.43 |  11.30 |   3.04 |   1.94 |
         ----------------+--------+--------+--------+--------+--------+
         AGREE           |     24 |     17 |     77 |    176 |     42 |    312
                         |      . |   2.56 |  11.61 |  26.55 |   6.33 |  47.06
                         |      . |   5.45 |  24.68 |  56.41 |  13.46 |
                         |      . |  48.57 |  43.50 |  59.46 |  27.10 |
         ----------------+--------+--------+--------+--------+--------+
         STRONGLY AGREE  |     36 |      4 |     77 |    109 |    108 |    298
                         |      . |   0.60 |  11.61 |  16.44 |  16.29 |  44.95
                         |      . |   1.34 |  25.84 |  36.58 |  36.24 |
                         |      . |  11.43 |  43.50 |  36.82 |  69.68 |
         ----------------+--------+--------+--------+--------+--------+
         TOTAL                  .       35      177      296      155      663
                                .     5.28    26.70    44.65    23.38   100.00

                           STATISTICS FOR 2-WAY TABLES

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.
         TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.
                       CHI-SQUARE                   175.649   DF=   9  PROB=0.0001
                       PHI                            0.515
                       CONTINGENCY COEFFICIENT        0.458
                       CRAMER'S V                     0.297
                       LIKELIHOOD RATIO CHISQUARE   116.484   DF=   9  PROB=0.0001
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                                                                                    12
          S T A T I S T I C A L   A N A L Y S I S   S Y S T E M      21:10 WEDNESDAY, AUGUST 19, 1981

                           TABLE OF WRTHYPRJ BY FREEPART

      WRTHYPRJ  THIS IS A  WORTHY PROJECT   FREEPART  SHOULD BE FREE TO PARTICIPANTS

      FREQUENCY  |
       PERCENT   |
       ROW PCT   |
       COL PCT   |NO RESPO|STRONGLY|DISAGREE|AGREE   |STRONGLY|  TOTAL
                 |NSE     |DISAGRE |        |        |AGREE   |
      -----------+--------+--------+--------+--------+--------+
      NO RESPONSE|      6 |      0 |      1 |      1 |      2 |      .
                 |      . |      . |      . |      . |      . |      .
                 |      . |      . |      . |      . |      . |
                 |      . |      . |      . |      . |      . |
      -----------+--------+--------+--------+--------+--------+
      STRONGLY DISAGRE|  3 |      7 |      3 |      4 |      2 |     16
                 |      . |   1.07 |   0.46 |   0.61 |   0.30 |   2.44
                 |      . |  43.75 |  18.75 |  25.00 |  12.50 |
                 |      . |  17.50 |   1.69 |   1.32 |   1.47 |
      -----------+--------+--------+--------+--------+--------+
      DISAGREE   |      2 |      4 |     15 |     12 |      5 |     36
                 |      . |   0.61 |   2.29 |   1.83 |   0.76 |   5.49
                 |      . |  11.11 |  41.67 |  33.33 |  13.89 |
                 |      . |  10.00 |   8.47 |   3.96 |   3.68 |
      -----------+--------+--------+--------+--------+--------+
      AGREE      |     33 |     14 |     85 |    161 |     43 |    303
                 |      . |   2.13 |  12.96 |  24.54 |   6.55 |  46.19
                 |      . |   4.62 |  28.05 |  53.14 |  14.19 |
                 |      . |  35.00 |  48.02 |  53.14 |  31.62 |
      -----------+--------+--------+--------+--------+--------+
      STRONGLY AGREE|  33 |     15 |     74 |    126 |     86 |    301
                 |      . |   2.29 |  11.28 |  19.21 |  13.11 |  45.88
                 |      . |   4.98 |  24.58 |  41.86 |  28.57 |
                 |      . |  37.50 |  41.81 |  41.58 |  63.24 |
      -----------+--------+--------+--------+--------+--------+
      TOTAL             .       40      177      303      136      656
                                6.10    26.98    46.19    20.73   100.00

                              STATISTICS FOR 2-WAY TABLES

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.
         TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

                  CHI-SQUARE                     68.171   DF=    9  PROB=0.0001
                  PHI                             0.322
                  CONTINGENCY COEFFICIENT         0.307
                  CRAMER'S V                      0.186
                  LIKELIHOOD RATIO CHISQUARE     46.388   DF=    9  PROB=0.0001
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h.s.

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              S T A T I S T I C A L   A N A L Y S I S   S Y S T E M                        13
                                                                   21:10 WEDNESDAY, AUGUST 19, 1981

                                TABLE OF WRTHYPRJ BY WILLTOPY

                  WRTHYPRJ  THIS IS A  WORTHY PROJECT   WILLTOPY  WILLING TO PAY

                  FREQUENCY       |
                   PERCENT        |
                   ROW PCT        |
                   COL PCT        |NO RESPO|STRONGLY|DISAGREE|AGREE   |STRONGLY|  TOTAL
                                  |NSE     | DISAGRE|        |        | AGREE  |
                  ----------------+--------+--------+--------+--------+--------+
                  NO RESPONSE     |      5 |      0 |      2 |      1 |      2 |      .
                                  |      . |      . |      . |      . |      . |      .
                                  |      . |      . |      . |      . |      . |
                                  |      . |      . |      . |      . |      . |
                  ----------------+--------+--------+--------+--------+--------+
                  STRONGLY DISAGRE|      1 |     14 |      2 |      1 |      1 |     18
                                  |      . |   1.97 |   0.28 |   0.14 |   0.14 |   2.54
                                  |      . |  77.78 |  11.11 |   5.56 |   5.56 |
                                  |      . |  16.09 |   0.84 |   0.30 |   1.82 |
                  ----------------+--------+--------+--------+--------+--------+
                  DISAGREE        |      1 |     14 |     19 |      3 |      1 |     37
                                  |      . |   1.97 |   2.68 |   0.42 |   0.14 |   5.21
                                  |      . |  37.84 |  51.35 |   8.11 |   2.70 |
                                  |      . |  16.09 |   7.95 |   0.91 |   1.82 |
                  ----------------+--------+--------+--------+--------+--------+
                  AGREE           |      7 |     33 |    137 |    147 |     12 |    329
                                  |      . |   4.65 |  19.30 |  20.70 |   1.69 |  46.34
                                  |      . |  10.03 |  41.64 |  44.68 |   3.65 |
                                  |      . |  37.93 |  57.32 |  44.68 |  21.82 |
                  ----------------+--------+--------+--------+--------+--------+
                  STRONGLY AGREE  |      8 |     26 |     81 |    178 |     41 |    326
                                  |      . |   3.66 |  11.41 |  25.07 |   5.77 |  45.92
                                  |      . |   7.98 |  24.85 |  54.60 |  12.58 |
                                  |      . |  29.89 |  33.89 |  54.10 |  74.55 |
                  ----------------+--------+--------+--------+--------+--------+
                  TOTAL                  .       87      239      329       55      710
                                         .    12.25    33.66    46.34     7.75   100.00

                                  STATISTICS FOR 2-WAY TABLES

 WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.
          TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

                        CHI-SQUARE                     150.348    DF=    9  PROB=0.0001
                        PHI                              0.460
                        CONTINGENCY COEFFICIENT          0.418
                        CRAMER'S V                       0.266
                        LIKELIHOOD RATIO CHISQUARE     120.381    DF=    9  PROB=0.0001
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                  S T A T I S T I C A L   A N A L Y S I S   S Y S T E M                                    14
                                                                              21:10 WEDNESDAY, AUGUST 19, 1981

                                      TABLE OF WRTHYPRJ BY FEEOK

                      WRTHYPRJ  THIS IS A  WORTHY PROJECT   FEEOK     FEE AMOUNTS APPROVED

                      FREQUENCY |
                       PERCENT  |
                       ROW PCT  |
                       COL PCT  |       .|       0|       1|       2|       3|  TOTAL
                      ----------+--------+--------+--------+--------+--------+
                      NO RESPONSE|      9|       0|       1|       0|       0|      .
                                |       .|       .|       .|       .|       .|      .
                                |       .|       .|       .|       .|       .|
                                |       .|       .|       .|       .|       .|
                      ----------+--------+--------+--------+--------+--------+
                      STRONGLY DISAGRE| 7|       9|       3|       0|       0|     12
                                |       .|    1.86|    0.62|    0.00|    0.00|   2.48
                                |       .|   75.00|   25.00|    0.00|    0.00|
                                |       .|    6.43|    2.01|    0.00|    0.00|
                      ----------+--------+--------+--------+--------+--------+
                      DISAGREE  |      14|      16|       4|       4|       0|     24
                                |       .|    3.31|    0.83|    0.83|    0.00|   4.97
                                |       .|   66.67|   16.67|   16.67|    0.00|
                                |       .|   11.43|    2.68|    3.42|    0.00|
                      ----------+--------+--------+--------+--------+--------+
                      AGREE     |     106|      70|      67|      60|      33|    230
                                |       .|   14.49|   13.87|   12.42|    6.83|  47.62
                                |       .|   30.43|   29.13|   26.09|   14.35|
                                |       .|   50.00|   44.97|   51.28|   42.86|
                      ----------+--------+--------+--------+--------+--------+
                      STRONGLY AGREE|  117|      45|      75|      53|      44|    217
                                |       .|    9.32|   15.53|   10.97|    9.11|  44.93
                                |       .|   20.74|   34.56|   24.42|   20.28|
                                |       .|   32.14|   50.34|   45.30|   57.14|
                      ----------+--------+--------+--------+--------+--------+
                      TOTAL             .      140      149      117       77      483
                                        .    28.99    30.85    24.22    15.94   100.00

                                        STATISTICS FOR 2-WAY TABLES

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.
         TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.

                              CHI-SQUARE                      41.139   DF=    9   PROB=0.0001
                              PHI                              0.292
                              CONTINGENCY COEFFICIENT          0.280
                              CRAMER'S V                       0.168
                              LIKELIHOOD RATIO CHISQUARE      44.626   DF=    9   PROB=0.0001
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h.s.

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                 S T A T I S T I C A L   A N A L Y S I S   S Y S T E M                                  15
                                                                          21:10 WEDNESDAY, AUGUST 19, 1981

                              TABLE OF WRTHYPRJ BY DSLKFEE

              WRTHYPRJ  THIS IS A  WORTHY PROJECT   DSLKFEE   DISLIKES SUGGESTED FEE LEVELS

              FREQUENCY
               PERCENT
               ROW PCT
               COL PCT   |       .|       0|       1|       2|       3|  TOTAL
              -----------+--------+--------+--------+--------+--------+
              NO RESPONSE|       9|       0|       0|       1|       0|      .
                         |       .|       .|       .|       .|       .|      .
                         |       .|       .|       .|       .|       .|
                         |       .|       .|       .|       .|       .|
              -----------+--------+--------+--------+--------+--------+
              STRONGLY DISAGRE|   7|       0|       0|       3|       9|     12
                         |       .|    0.00|    0.00|    0.62|    1.86|   2.48
                         |       .|    0.00|    0.00|   25.00|   75.00|
                         |       .|    0.00|    0.00|    2.01|    6.43|
              -----------+--------+--------+--------+--------+--------+
              DISAGREE   |      14|       0|       4|       4|      16|     24
                         |       .|    0.00|    0.83|    0.83|    3.31|   4.97
                         |       .|    0.00|   16.67|   16.67|   66.67|
                         |       .|    0.00|    3.42|    2.68|   11.43|
              -----------+--------+--------+--------+--------+--------+
              AGREE      |     106|      33|      60|      67|      70|    230
                         |       .|    6.83|   12.42|   13.87|   14.49|  47.62
                         |       .|   14.35|   26.09|   29.13|   30.43|
                         |       .|   42.86|   51.28|   44.97|   50.00|
              -----------+--------+--------+--------+--------+--------+
              STRONGLY AGREE|    117|      44|      53|      75|      45|    217
                         |       .|    9.11|   10.97|   15.53|    9.32|  44.93
                         |       .|   20.28|   24.42|   34.56|   20.74|
                         |       .|   57.14|   45.30|   50.34|   32.14|
              -----------+--------+--------+--------+--------+--------+
              TOTAL             .       77      117      149      140      483
                                .    15.94    24.22    30.85    28.99   100.00

                              STATISTICS FOR 2-WAY TABLES

WARNING: OVER 20% OF THE CELLS HAVE EXPECTED COUNTS LESS THAN 5.
         TABLE IS SO SPARSE THAT CHI-SQUARE MAY NOT BE A VALID TEST.
                       CHI-SQUARE                      41.139   DF=   9  PROB=0.0001
                       PHI                              0.292
                       CONTINGENCY COEFFICIENT          0.280
                       CRAMER'S V                       0.168
                       LIKELIHOOD RATIO CHISQUARE      44.626   DF=   9  PROB=0.0001
```

n.S.

Page 1 of 3

```
PAGE   2     MAILCLASS MEAN COMPARISONS

DIFFERENCES AMONG GROUP MEANS USING ALL VARIABLES
FOR THE FOLLOWING GROUPS
************
* * 1.0000 *
* * 3.0000 *
************
```

Over all (all items considered simultaniously)

```
  MAHALANOBIS D SQUARE              0.0671
  HOTELLING T SQUARE                8.0086
  F VALUE                           0.7147     P VALUE    0.725
    DEGREES OF FREEDOM       11, 543
```

not sig.

```
 WARNING - SINCE SPECIAL MISSING VALUE FORMULAS ARE USED,
           THESE MULTIVARIATE STATISTICS ARE ONLY APPROXIMATE.

 DIFFERENCES ON SINGLE VARIABLES

  ************
  * PRFCNTRG *  VARIABLE NUMBER   2      GROUP      1 * 1.0000   2 * 3.0000
  ************                           MEAN           2.7971       2.7571
           STATISTICS    P VALUE   DF    STD DEV        0.7295       0.7832
                                         S.E.M.         0.0501       0.0368
                                         SAMPLE SIZE       212          453
  T (SEPARATE)      0.64  0.520  440.3   MAXIMUM        4.0000       4.0000
  T (POOLED)        0.63  0.530  663     MINIMUM        1.0000       1.0000

  F(FOR VARIANCES)
       LEVENE       1.75  0.186    1, 663

      1 * 1.0000(N= 212)              2 * 3.0000(N= 453)
                                                X
                                                X
                                          X     X
                    H                     X     X
             H      H                     X     X     X
       H     H      H      H           X  X     X     X
    MIN--------------------MAX      MIN--------------------MAX
      AN H =    38 CASES              AN X =    38 CASES

  ************
  * CRFCTACV *  VARIABLE NUMBER   3      GROUP      1 * 1.0000   2 * 3.0000
  ************                           MEAN           2.9497       2.9511
           STATISTICS    P VALUE   DF    STD DEV        0.7703       0.7991
                                         S.E.M.         0.0546       0.0385
                                         SAMPLE SIZE       199          430
  T (SEPARATE)     -0.02  0.984  398.7   MAXIMUM        4.0000       4.0000
  T (POOLED)       -0.02  0.984  627     MINIMUM        1.0000       1.0000

  F(FOR VARIANCES)
       LEVENE       0.59  0.443    1, 627

      1 * 1.0000(N= 199)              2 * 3.0000(N= 430)
                    H                           X
                    H                           X
                    H                           X     X
             H      H      H              X     X     X
             H      H      H              X     X     X
       H     H      H      H           X  X     X     X
    MIN--------------------MAX      MIN--------------------MAX
      AN H =    17 CASES              AN X =    35 CASES

  ************
  * CRSCRDTL *  VARIABLE NUMBER   4      GROUP      1 * 1.0000   2 * 3.0000
  ************                           MEAN           2.6666       2.6582
           STATISTICS    P VALUE   DF    STD DEV        0.7588       0.7960
                                         S.E.M.         0.0570       0.0399
                                         SAMPLE SIZE       177          398
  T (SEPARATE)      0.12  0.904  352.9   MAXIMUM        4.0000       4.0000
  T (POOLED)        0.12  0.905  573     MINIMUM        1.0000       1.0000

  F(FOR VARIANCES)
       LEVENE       0.52  0.471    1, 573

      1 * 1.0000(N= 177)              2 * 3.0000(N= 398)
             H      H                           X
             H      H                     X     X
             H      H                     X     X
             H      H                     X     X
             H      H      H              X     X     X
       H     H      H      H           X  X     X     X
    MIN--------------------MAX      MIN--------------------MAX
      AN H =    13 CASES              AN X =    30 CASES
```

Page 2 of 3

```
PAGE    3     MAILCLASS MEAN COMPARISONS

DIFFERENCES ON SINGLE VARIABLES

                                                                                      1 * 1.0000(N= 176)                2 * 3.0000(N= 392)
***********                                 GROUP      1 * 1.0000   2 * 3.0000             H                                 X
* CRFCTMRT *   VARIABLE NUMBER    5         MEAN           2.4261       2.3698             H      H                          X
***********                                 STD DEV        0.6548       0.7524             H      H                          X      X
            STATISTICS     P VALUE    DF    S.E.M.         0.0494       0.0380             H      H                          X      X
                                            SAMPLE SIZE       176          392             H      H                    X     X      X
T (SEPARATE)        0.90   0.367  383.6     MAXIMUM        4.0000       4.0000       H     H      H     H              X     X      X     X
T (POOLED)          0.86   0.392  566       MINIMUM        1.0000       1.0000    MIN--------------------MAX        MIN--------------------MAX
                                                                                      AN H =    16 CASES                AN X =    33 CASES
F(FOR VARIANCES)
     LEVENE         3.14   0.077    1, 566

                                                                                      1 * 1.0000(N= 197)                2 * 3.0000(N= 432)
***********                                 GROUP      1 * 1.0000   2 * 3.0000                    H                                 X
* TRANACHV *   VARIABLE NUMBER    6         MEAN           3.1827       3.1481                    H     H                           X     X
***********                                 STD DEV        0.7264       0.7439                    H     H                           X     X
            STATISTICS     P VALUE    DF    S.E.M.         0.0518       0.0358                    H     H                           X     X
                                            SAMPLE SIZE       197          432             H      H     H                    X      X     X
T (SEPARATE)        0.55   0.582  388.0     MAXIMUM        4.0000       4.0000       H     H      H     H              X     X      X     X
T (POOLED)          0.55   0.586  627       MINIMUM        1.0000       1.0000    MIN--------------------MAX        MIN--------------------MAX
                                                                                      AN H =    17 CASES                AN X =    36 CASES
F(FOR VARIANCES)
     LEVENE         0.01   0.934    1, 627

                                                                                      1 * 1.0000(N= 216)                2 * 3.0000(N= 454)
***********                                 GROUP      1 * 1.0000   2 * 3.0000                                              X     X
* PRMRGACV *   VARIABLE NUMBER    7         MEAN           3.3148       3.3369                                              X     X
***********                                 STD DEV        0.6491       0.7538                                              X     X
            STATISTICS     P VALUE    DF    S.E.M.         0.0442       0.0354                    H     H                   X     X
                                            SAMPLE SIZE       216          454                    H     H                   X     X
T (SEPARATE)       -0.39   0.696  484.7     MAXIMUM        4.0000       4.0000       H     H      H     H              X     X      X     X
T (POOLED)         -0.37   0.711  668       MINIMUM        1.0000       1.0000    MIN--------------------MAX        MIN--------------------MAX
                                                                                      AN H =    37 CASES                AN X =    37 CASES
F(FOR VARIANCES)
     LEVENE         5.66   0.018    1, 668

                                                                                      1 * 1.0000(N= 225)                2 * 3.0000(N= 483)
***********                                 GROUP      1 * 1.0000   2 * 3.0000                                              X
* REWPEREX *   VARIABLE NUMBER    8         MEAN           3.3244       3.3684                                              X     X
***********                                 STD DEV        0.5950       0.6084                                              X     X
            STATISTICS     P VALUE    DF    S.E.M.         0.0397       0.0277                    H     H                   X     X
                                            SAMPLE SIZE       225          483                    H     H                   X     X
T (SEPARATE)       -0.91   0.363  446.1     MAXIMUM        4.0000       4.0000       H     H      H     H              X     X      X     X
T (POOLED)         -0.90   0.367  706       MINIMUM        1.0000       1.0000    MIN--------------------MAX        MIN--------------------MAX
                                                                                      AN H =    42 CASES                AN X =    42 CASES
F(FOR VARIANCES)
     LEVENE         0.93   0.335    1, 706
```

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PAGE   4     MAILCLASS MEAN COMPARISONS

DIFFERENCES ON SINGLE VARIABLES

************
* EXEMPREC *  VARIABLE NUMBER   9      GROUP    1 * 1.0000  2 * 3.0000       1 * 1.0000(N= 228)           2 * 3.0000(N= 477)
************                           MEAN         2.7061      2.6708                                                X
         STATISTICS    P VALUE   DF    STD DEV      0.7777      0.8037                                         X      X
                                       S.E.M.       0.0515      0.0370                   H                     X      X
T (SEPARATE)     0.56  0.578  463.3    SAMPLE SIZE     228         477                   H                     X      X
T (POOLED)       0.55  0.583  703      MAXIMUM      4.0000      4.0000            H      H                     X      X     X
                                       MINIMUM      1.0000      1.0000      H     H      H     H         X     X      X     X
F(FOR VARIANCES)                                                         MIN--------------------MAX   MIN--------------------MAX
    LEVENE       1.51  0.219    1, 703                                       AN H =    36 CASES           AN X =    36 CASES

************
* FEEAMT3  *  VARIABLE NUMBER  10      GROUP    1 * 1.0000  2 * 3.0000       1 * 1.0000(N= 189)           2 * 3.0000(N= 399)
************                           MEAN         2.7883      2.6591                                                X
         STATISTICS    P VALUE   DF    STD DEV      0.9037      0.9689                                                X
                                       S.E.M.       0.0657      0.0485                   H                     X      X     X
T (SEPARATE)     1.58  0.114  393.4    SAMPLE SIZE     189         399                   H               X     X      X     X
T (POOLED)       1.54  0.123  586      MAXIMUM      4.0000      4.0000            H      H     H         X     X      X     X
                                       MINIMUM      1.0000      1.0000      H     H      H     H         X     X      X     X
F(FOR VARIANCES)                                                         MIN--------------------MAX   MIN--------------------MAX
    LEVENE       4.59  0.032    1, 586                                       AN H =    26 CASES           AN X =    26 CASES

************
* FEEAMT5  *  VARIABLE NUMBER  11      GROUP    1 * 1.0000  2 * 3.0000       1 * 1.0000(N= 163)           2 * 3.0000(N= 362)
************                           MEAN         2.1472      2.1878                                         X
         STATISTICS    P VALUE   DF    STD DEV      0.7717      0.8539                                         X      X
                                       S.E.M.       0.0604      0.0449                               X     X      X
T (SEPARATE)    -0.54  0.590  343.1    SAMPLE SIZE     163         362            H                      X     X      X
T (POOLED)      -0.52  0.604  523      MAXIMUM      4.0000      4.0000      H     H      H               X     X      X
                                       MINIMUM      1.0000      1.0000      H     H      H     H         X     X      X     X
F(FOR VARIANCES)                                                         MIN--------------------MAX   MIN--------------------MAX
    LEVENE       3.86  0.050    1, 523                                       AN H =    26 CASES           AN X =    26 CASES

************
* FEELT10  *  VARIABLE NUMBER  12      GROUP    1 * 1.0000  2 * 3.0000       1 * 1.0000(N= 174)           2 * 3.0000(N= 377)
************                           MEAN         2.5402      2.4562            H      H     H         X     X      X
         STATISTICS    P VALUE   DF    STD DEV      1.0944      1.0958      H     H      H     H         X     X      X     X
                                       S.E.M.       0.0830      0.0564      H     H      H     H         X     X      X     X
T (SEPARATE)     0.84  0.403  336.9    SAMPLE SIZE     174         377      H     H      H     H         X     X      X     X
T (POOLED)       0.84  0.403  549      MAXIMUM      4.0000      4.0000      H     H      H     H         X     X      X     X
                                       MINIMUM      1.0000      1.0000      H     H      H     H         X     X      X     X
F(FOR VARIANCES)                                                         MIN--------------------MAX   MIN--------------------MAX
    LEVENE       0.00  0.970    1, 549                                       AN H =     8 CASES           AN X =    18 CASES
```

only item even close to significance

IEEE Continuing Education Registry
Course Evaluation Questionnaire Results

The tabulated results for the course evaluation questionnaire data gathered from January, 1979 through October, 1980 are presented in Table 1. The values under each response category (AS, A, D, DS) are proportions of the 95 students selecting each response. The mean was calculated on the basis of a 4, 3, 2, 1 weighting of the most positive to the least positive response. The column labeled "BEST" indicates the most positive response to each item. Thirteen of the 25 items were taken from the Arizona Course/Instructor Evaluation Questionnaire (CIEQ) which has extensive normative data. Using the normative data on the CIEQ items will help in interpreting the results on the other 12 items.

The normative data (deciles) for the 13 CIEQ items and the two subscales that could be formed from eight of those 13 items are presented in Table 2. The decile columns labeled "U of A" and "Overall" present a comparison of this group's MEAN responses with those obtained in other courses at the University of Arizona and in the 100 colleges and universities that have used the CIEQ throughout the United States. The additional decile column in the subscale area labeled "Level" presents a comparison of this group's MEAN responses to all University of Arizona and nationwide courses at the graduate level. The deciles range from a low of 0 to a high of 9 and may be interpreted as follows:

0 indicates that the group MEAN falls in the lowest 10% of the norm group,

1 indicates that there are 10 to 19% of the norm group who received lower means,

2 indicates that there are 20 to 29% of the norm group who received lower means,

and so on through 9.

The following categories have been established to interpret the deciles:

deciles in the 0-2 range are considered "poor",

deciles in the 3-6 range are considered "average" and

deciles in the 7-9 range are considered "good".

The subscale data presented in Table 2 indicates that this group feels that the method of instruction and the course content are above average in comparison to the normative data base. In fact the deciles indicate that the ratings on these two scales place the content and method of instruction in the upper 40% of the normative data base.

Using the pattern of responses on the CIEQ items as a reasonable standard for the other items, one can see that there were only six items that reflect below average ratings. These items are numbers 7, 15, 16, 18, 23 and 25.

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If one were to plan improvements in this instruction, those six items should be used to pin-point the area of weakness. For example, the low deciles for those items might indicate that the students are not confident that they have met the desired instructional objectives of the course and instructors.

Table 1

Item Results for the IEEE Continuing Education Registry Course Evaluation Questionnaire

Items	Responses						
	AS	A	D	DS	BEST	MEAN	S.D.
1. It was a very worthwhile course.	.52	.45	.01	.02	AS	3.46	.63
2. I would take another course that was taught this way.	.43	.52	.03	.01	AS	3.38	.61
3. The course material was presented in logical content units.	.37	.57	.06	.00	AS	3.31	.58
4. The course material was too difficult.	.02	.04	.49	.42	DS	3.34	.67
5. The course content was appropriate to the aims and objectives of the course.	.38	.59	.02	.01	AS	3.34	.58
6. The course was quite interesting.	.47	.44	.07	.01	AS	3.38	.67
7. It was NOT clear why certain things were being taught.	.02	.18	.36	.44	DS	3.22	.81
8. NOT much was gained by taking this course.	.01	.08	.28	.61	DS	3.51	.70
9. I would have preferred another method of teaching in this course.	.04	.12	.58	.26	DS	3.06	.74
10. Course concepts were related in a systematic manner.	.32	.60	.07	.01	AS	3.22	.62
11. The course material seemed worthwhile.	.42	.55	.02	.01	AS	3.38	.59
12. The course was quite boring.	.03	.03	.40	.53	DS	3.44	.71
13. I have learned basic information in this course which I will be able to relate to other situations.	.48	.47	.02	.02	AS	3.42	.65
14. Overall the course was good.	.46	.49	.03	.01	AS	3.41	.61
15. I learn more when other teaching methods are used.	.06	.16	.64	.13	DS	2.84	.72
16. For the time allotted, topic coverage was exhaustive.	.08	.55	.28	.07	AS	2.65	.74
17. Some things were NOT explained very well.	.02	.33	.49	.15	DS	2.78	.72
18. I now feel able to communicate course materials to others.	.14	.79	.06	.01	AS	3.05	.49
19. I have become more confident in this area because of this course.	.37	.59	.03	.01	AS	3.32	.59
20. The course was well organized.	.32	.58	.11	.00	AS	3.21	.62
21. I think that the course was taught quite well.	.31	.59	.08	.02	AS	3.18	.67
22. The course content was excellent.	.33	.56	.11	.01	AS	3.20	.66
23. Too much material was covered in this course.	.04	.14	.66	.16	DS	2.94	.68
24. The course was helpful in developing new skills.	.28	.59	.11	.02	AS	3.14	.68
25. I developed an ability to evaluate new work in this field.	.19	.63	.14	.02	AS	3.01	.65

Table 2

Decile Normative Data for the 13 CIEQ Items and Two Subscales

Item Numbers	CIEQ Subscale Designation	Decile U of A	Decile Overall
1	General Course Attitude	6	7
2	Method of Instruction	7	7
4	Course Content	7	7
6	Interest and Attention	7	7
8	General Course Attitude	7	7
9	Method of Instruction	6	6
11	Course Content	6	6
12	Interest and Attention	7	7
14	General Course Attitude	6	6
15	Method of Instruction	4	4
17	Course Content	5	5
21	Method of Instruction	6	5
22	Course Content	7	7

Subscale	MEAN	S.D.	U of A Overall	U of A Level	National Overall	National Level
Method of Instruction	3.12	.71	6	5	6	5
Course Content	3.18	.71	7	5	6	5

Dear Validation Registry Participant:

Thank you for participating in the NSF-Funded IEEE Computer-based Registry for Technical Continuing Education non-degree credits.

You will recall that the purpose of this two-year grant has been:

- To motivate persons practicing electrical and electronics engineering to pursue quality technical continuing education courses offered by any responsible sponsor.
- To develop a model system that will validate practicing engineers' achievements in electrical and electronics continuing education courses.
- An aid to career planning.

As this program approaches its initial evaluation, we need your guidance for future planning.

Please complete the attached questionnaire and return **before 1 August 1981.**

Thank you for your help.

Very truly yours,

Roy H. Mattson

Roy H. Mattson
Program Director

Please Detach - Staple and return your completed questionnaire.

PROGRAM EVALUATION QUESTIONNAIRE

Please respond to **each** statement.

MARKING INSTRUCTIONS
AS - You **agree strongly**
A - You **agree**
D - You **disagree**
DS - You **disagree strongly**

1. This is a worthwhile IEEE Project. AS__ A__ D__ DS__

2. I would prefer that the Validation and Registry be administered by a centralized organization for all Engineering Continuing Education, such as ABET (Accreditation Board for Engineering and Technology). AS__ A__ D__ DS__

3. Recognition of participation in an evaluated Continuing Engineering Education course should result in a
   - — Certificate of Achievement AS__ A__ D__ DS__
   - — Course Credit Award Label. AS__ A__ D__ DS__
   - — Certificate of Merit AS__ A__ D__ DS__
   - — Transcript of all Achievements AS__ A__ D__ Ds__
   - — Permanent Registry of all Achievements. As__ A__ D__ DS__

4. My Continuing Engineering Education Achievements have been a rewarding personal experience. AS__ A__ D__ DS__

5. I expect my employer to recognize or reward me for my Continuing Engineering Education Achievements. AS__ A__ D__ DS__

6. As a Continuing Education Course Participant, I expect a Validation and Registry system to be available
   - as a free professional society member service AS__ A__ D__ DS__
   - as a free service for course participants AS__ A__ D__ DS__

7. I would pay for a centralized Continuing Engineering Education Validation & Registry System that would maintain a permanent registry of my achievements and supply transcripts at my personal request. AS__ A__ D__ DS__

8. The fee for the registration of each Continuing Education Course Attendance and Transcript should be:

$3. .... AS__ A__ D__ DS__
$5. .... AS__ A__ D__ DS__
Less than $10. .... AS__ A__ D__ DS__

CONTINUING EDUCATION COURSE ATTENDANCE AND PARTICIPANT INFORMATION FORM

Please enter this information into the "Validation of the Continuing Education Achievement of Engineers Project."

IMPORTANT: Please print or type.

PARTICIPANT INFORMATION

IEEE MEMBER NO.

IEEE MEMBER (Check one) YES ☐ NO ☐

NAME (Mr./Mrs., etc.) First Middle Initial Last (Jr., Ph.D., etc.)

ADDRESS

City State Zip Code

TELEPHONE NO. Ext. Business ☐ Home ☐ (Check one)

FIRST ACADEMIC DEGREE INFORMATION

For IEEE use only.

COLLEGE/UNIV.

CAMPUS

ABET ACCREDITATION (ECPD) YES ☐ (Check one) NO ☐

FIRST DEGREE (Abbreviation) MAJOR (Abbreviation) YEAR OF DEGREE 19

COURSE ATTENDANCE

For IEEE use only.

COURSE SPONSOR (Institution Name or IEEE entity)

Course Coordinator/Instructor First Middle Initial Last

ADDRESS

City State Zip Code

TELEPHONE NO. Ext.

COURSE NUMBER

DATE COMPLETED Mo. Yr.

COURSE TITLE

WHERE HELD City (Blank if Home Study) State

Home Study YES or NO ☐ ☐

NON DEGREE CREDITS .

TYPE OF UNIT (CEU, HRS., CEAU, etc.)

For IEEE use only.

PLEASE COMPLETE THE COURSE EVALUATION QUESTIONNAIRE ON THE BACK OF THIS FORM

COURSE EVALUATION QUESTIONAIRE

PLEASE respond to each statement.

MARKING INSTRUCTIONS
AS - If you agree strongly with the item
A - If you agree moderately with the item
D - If you disagree moderately with the item
DS - If you disagree strongly with the item

1. It was a very worthwhile course. AS__ A__ D__ DS__
2. I would take another course that was taught this way. AS__ A__ D__ DS__
3. The course material was present in logical content units. AS__ A__ D__ DS__
4. The course material was too difficult. AS__ A__ D__ DS__
5. The course content was appropriate to the aims and objectives of the course. AS__ A__ D__ DS__
6. The course was quite interesting. AS__ A__ D__ DS__
7. It was not clear why certain things were being taught. AS__ A__ D__ DS__
8. NOT much was gained by taking this course. AS__ A__ D__ DS__
9. I would have preferred another method of teaching this course. AS__ A__ D__ DS__
10. Course concepts were related in a systematic manner. AS__ A__ D__ DS__
11. The course material seemed worthwhile. AS__ A__ D__ DS__
12. The course was quite boring. AS__ A__ D__ DS__
13. I have learned basic information in this course which I will be able to relate to other situations. AS__ A__ D__ DS__
14. Overall the course was quite good. AS__ A__ D__ DS__
15. I learn more when other teaching methods are used. AS__ A__ D__ DS__
16. For the time allotted, topic coverage was exhaustive. AS__ A__ D__ DS__
17. Some things were NOT explained very well. AS__ A__ D__ DS__
18. I now feel able to communicate course material to others. AS__ A__ D__ DS__
19. I have become more confident in this area because of this course. AS__ A__ D__ DS__
20. The course was well organized. AS__ A__ D__ DS__
21. I think that the course was taught quite well. AS__ A__ D__ DS__
22. The course content was excellent. AS__ A__ D__ DS__
23. Too much material was covered in this course. AS__ A__ D__ DS__
24. The course was helpful in developing new skills. AS__ A__ D__ DS__
25. I developed an ability to evaluate work in this field. AS__ A__ D__ DS__

Participant's Signature ______________________________

Date ______________________________

VALIDATION OF THE CONTINUING EDUCATION ACHIEVEMENT OF ENGINEERS
NSF PROJECT GRANT NO. SED-7918989
POST OFFICE BOX 453, PISCATAWAY, NEW JERSEY 08854

IEEE FOCUS ON EDUCATION

A supplement provided by the IEEE Educational Activities Board*

The IEEE's Educational Activities Board (EAB) is offering a new pervasive system to validate and record the continuing achievements of engineers who choose to participate. The computer-based registry will also offer the following services:

- It will print an up-to-date transcript of each user's completed continuing education courses.
- It will validate the courses that a user enters into the system—that is, it will confirm with the course sponsor that the course was taken.
- It will help monitor the quality of continuing education courses by cataloguing the comments of those who take them.

Interest in formal registries for tracking continuing education courses has been high among professional societies—evident in the rapid growth in the past few years of such courses and in the number of engineers taking them. Surveys have also demonstrated a desire for such a registry among the engineers who would use it. As a result, the IEEE began setting one up in 1979.

> **'The IEEE will automatically enter into the IEEE Validation and Registry System course attendance and participant information for all IEEE members and nonmembers who complete a short course, home study course, or video course sponsored by the IEEE Educational Activities Board.'**
>
> —*Edward W. Ernst, IEEE Vice President, Educational Affairs*

Since September 1979, the IEEE's Validation and Registry System has been available at no cost to all course sponsors and participants through the financial support of the two-year $124 000 National Science Foundation grant awarded to the IEEE Educational Activities Board. The grant helped build the system.

> **'Cost should be reflected in course fees rather than membership dues.'**
>
> —*Survey respondent*
>
> **'Transcripts of all achievements should be available on demand.'**
>
> —*Survey respondent*
>
> **'My motivations are personal satisfaction of self-improvement, pleasure of satisfying curiosity, and having continuing education credits.'**
>
> —*Survey respondent*

Now the grant has run out, but the IEEE has completed the design and development of a system for validating and recording continuing education achievements. The system has been available since Dec. 31, 1981, only to those taking IEEE continuing education courses and the cost of the system has been factored into the cost of IEEE/EAB courses.

The system became fully operational in March 1980. By the end of 1981, the data base contained 10 000 records. Of the participants, 40 percent are non-IEEE members and 73 percent of the recorded courses are offered by organizations other than the IEEE.

This centralized system is now available to IEEE members and others taking IEEE courses. All data supplied by system users on IEEE course-attendance and participant-information forms are processed via a CPT-8000 word processor and an IBM 3033 central processing unit.

An IBM laser printer can produce letters to course sponsors and course participants, record payments, send transcripts, and produce all the necessary stationery and forms for any of 20 different purposes, among them:

- Appropriate letters confirming course registrations and payment transactions.
- Transmittal letters for a Certificate of Achievement, course credit award label, Certificate of Merit, Continuing Education Achievement Units, or transcript.
- Requests to course sponsors of attendance and student performance or peer review of course offerings.

> **'This is a unique member service that responds to the career needs of the practicing engineer.'**
>
> —*Eric Herz, IEEE General Manager*

In July 1981, a survey of the Validation and Registry System's participants indicated that the project meets the needs of the practicing engineer. Of the survey respondents, 92 percent said that the Validation and Registry System is a worthwhile project and 54 percent of the program participants said that they would pay for the service if they had to. In addition, more than 90 percent acknowledge that their continuing education achievements have been personally rewarding and 58 percent expect employer recognition.

The basic purpose of the program is to motivate electrical and electronics engineers to pursue quality technical courses offered by any responsible sponsor. The July 1981 survey results show that this purpose is being achieved:

- 74 percent of the respondents pursue courses that award them "quality" credit recognition in the form of Continuing Education Achievement Units (CEAUs).
- 82 percent are motivated by the availability of a permanent registry for their courses and credit recognition.

In August 1978, concern over the quality of continuing education course offerings prompted the IEEE Board of Directors, on the recommendation of the IEEE Educational Activities Board, to adopt a policy that defines the CEAU as a measure of quality course-credit recognition.

Though the IEEE recognizes that there is a need for informal, nonevaluated course offerings, the CEAU will be awarded for satisfactory student performance in an IEEE-evaluated and accepted course.

The quality of sponsored courses that grant the awarding of the CEAU is ensured through two levels of evaluation: (1) evaluation of the course done by the IEEE's own technical peer experts, and (2) evaluations done by each participant upon completion of the course. In addition, each course participant's learning accomplishment must be evaluated.

The IEEE's anxiety over the quality of continuing education offerings is also reflected in national organizations, such as the Accreditation Board for Engineering and Technology and the American Society for Engineering Education, that are trying to set up systems to monitor and control the quality of continuing education courses.

The long-range goal of the IEEE is to develop more sophisticated course-evaluation techniques and to broaden the number of continuing education course offerings eligible for CEAU credits.

At present, 30 sponsors of continuing education courses have requested the IEEE's technical reviews in order to get the CEAU-credit standing. The immediate problem in meeting these requests is finding properly qualified IEEE members willing to volunteer their time for the evaluation. This work load does not include courses from ABET-accredited college curricula taken not for credit. Members interested in helping review courses should contact John Wilhelm, staff director, IEEE Educational Services, 345 E. 47th St., New York, N.Y. 10017.

> **'The program will lead to improved quality of continuing education courses.'**
>
> —*Ray H. Mattson, principal investigator, NSF Validation and Registry grant*

The immediate objective of the IEEE/EAB is to develop an experimental mechanism to accredit continuing education sponsors and thus ensure the quality of their courses. The IEEE Validation and Registry System would in turn monitor the quality of these CEAU courses through recorded participant evaluations. Should a course's quality decline, as measured by its participants' evaluations, appropriate administrative actions would be taken to either improve the course or withdraw its CEAU status.

Demonstrating the rapidly growing interest in this type of system, the National Society of Professional Engineers and several other professional associations are now using the American College Testing Service's National Registry. In addition, the Educational Testing Service has begun to develop a continuing education registry of its own. Actions like the following by other engineering societies have been accelerating:

> **'Plan now to be a part of this program.'**
>
> —*John F. Wilhelm, staff director, IEEE Educational Services*

- The Accreditation Board for Engineering and Technology is actively exploring the accreditation of and a centralized registry for Engineering and Technology Continuing Education.
- The American Association of Engineering Societies Engineering Affairs Council has expressed support for the concept of a centralized continuing engineering education registry as a necessary supporting service for the practicing engineer.
- The American Society of Mechanical Engineers is actively planning the features, service, and cost-benefit ratio of a centralized registry system as a supporting activity for members' professional development.
- The Society of Manufacturing Engineers continues pilot studies to evaluate continuing education achievements.

> **'A centralized continuing education reporting system is in concept a necessary supporting service for the practicing engineer.'**
>
> —*Patrick J. Sheridan, Engineering Manpower Commission*

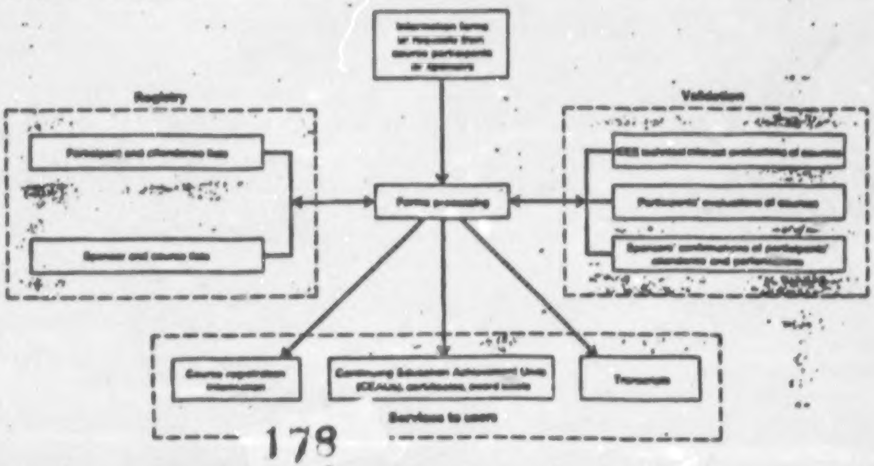
Other technical societies actively exploring the validation and registration of quality continuing education include:

- Instrument Society of America
- American Society for Quality Control
- American Institute of Industrial Engineers
- American Chemical Society
- American Society of Association Executives
- American Society of Plastic Engineers
- American Institute of Aeronautics and Astronautics
- National Society of Professional Engineers

For additional information, those who wish to be part of this program should write to: IEEE Validation of the Continuing Education Achievement of Engineers Registry, 445 Hoes Lane, Piscataway, N.J. 08854.

> **'Responsible quality control of continuing education course offerings and a readily accessible record of continuing education participants are a must for the engineering profession. The IEEE project is a pioneer in the field.'**
>
> —*David Reyes-Guerra, executive director, Accreditation Board for Engineering and Technology*

The IEEE Validation and Registry System records courses and participation and validates that a given individual in fact took a particular course. The system offers a number of services to the participants, including issuing transcripts on demand and awarding certification of continuing education achievement.


Information forms or requests from course participants or sponsors
Registry
Participant and attendance data
Sponsor and course data
Forms processing
Validation
IEEE technical interest evaluations of courses
Participants' evaluations of courses
Sponsors' confirmations of participants' attendance and performance
Course registration information
Continuing Education Achievement Units (CEAUs), certificates, award labels
Transcripts
Services to users

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*Funding from Educational Activities Board budget